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This Work
ON
ORIENTAL METROLOGY AND MEASURES OF TIME,
IS
RESPECTFULLY AND GRATEFULLY
DEDICATED,
BY THEIR MOST OBEDIENT
AND FAITHFUL SERVANT,
THE AUTHOR.

TO THE HONOURABLE

THE COURT OF DIRECTORS

THE EAST INDIA COMPANY,

Calcutta

ORIENTAL METROLOGY AND MEASURES OF TIME

BY JAMES H. MASON, ESQ.

INDICATED

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THE AUTHOR.

PREFACE.

THIS Work contains, within a narrow compass, the results of extensive and important operations. It comprises, with other useful matter, all the articles which are dispersed throughout the *Universal Cambist* relating to the Monies, Weights, and Measures of Asia. But in order to describe the work more particularly, some account should be given of the publication above mentioned, on which it is founded, and which contains the Metrology of all nations reduced to the English Standard by order and with the assistance of the British Government and the Honourable East India Company.

When the *Universal Cambist* was originally undertaken, the Author had three principal objects to accomplish, viz. to correct the Tables of Foreign Exchanges, Foreign Coins, and Foreign Weights and Measures. The two former were completed in the first Edition, but the Tables of Foreign Weights and Measures, though obviously erroneous, as abounding in contradictory statements, could not be corrected without comparing their Standards; and few foreign Standards were then to be obtained owing to the war that extensively prevailed. When peace, however, was restored, the following plan of correction was submitted to the Board of Trade, by whose authority and influence it was thus carried into effect.

In 1818 a Circular Order was issued by Government, directing all British Consuls abroad to procure and send home attested Standards of the Weights and Measures used at their respective Consulates; which, having been accordingly transmitted, were compared with English Standards at the London Mint.

In 1821 the results of all these experiments, carefully verified, were published in the Second Edition of the *Cambist*.

By the above system of comparisons and verifications, executed for the first time by official Authorities, numerous corrections of

importance were effected ; but still the operation was incomplete, as the Circular to the Consuls did not extend to the East Indies. The Court of Directors, however, seeing the utility and success of the plan, resolved to adopt it, and accordingly issued the following Circular ; which is here fully copied, in order to shew the extent and importance of the undertaking on which the present work is founded ; and which has been executed throughout with unremitting attention to accuracy.

COPY OF THE DIRECTORS' CIRCULAR.

“ Extract of the Public Letter from the Court of Directors to Bengal, dated London, 10th of January, 1821.

“ A commission having been lately issued by the Crown, to consider the subject of Weights and Measures, we are desirous of being enabled to assist the pending inquiry, by the fullest information which can be procured concerning Weights and Measures, in all countries with which England has commercial relations in Asia.

“ For this purpose we forward a number in the packet, the draft of a Letter of Instructions, which we desire you will issue to commercial residents, collectors of customs, and such other persons under your authority, as may be thought competent to furnish the required information. You will communicate the result to us without delay, forwarding from time to time the information received in pursuance of those instructions until the inquiry be completed.”

“ Draft of Instructions to be issued to Commercial Residents, Collectors of Customs, and other Public Officers, referred to in the foregoing Extract.

“ You are to procure and forward two sets of models, being accurate counterparts of the standard Weights and Measures in use at your Station, for weighing and measuring goods and merchandise of every description.

“ In places where different denominations and standards of Weight or Measure are employed for particular articles, distinctly from ordinary commodities, separate counterparts of the various Weights and Measures are to be furnished.

“ Should Weights or Measures in use at places within your authority

vary from those established at your principal station, you will likewise procure distinct sets of Weights or Measures so differing.

“It will not be necessary that the sets of models should comprehend subdivisions, nor multiples of the principal Weight or Measure of each series. A model of one in a series will suffice; and a convenient one to be selected for Weights may be that which is nearest to the pound (as the seer and the catty, where maunds and peculs are in use respectively); and in like manner for Measures of length, one that is nearest to the cubit or the ell; and for Measures of capacity, one that is next to the pint or the quart.

“To every model should be annexed a specification of the usual subdivisions, or smaller Weights employed as aliquot parts, as well as of the greater Weights used as multiples of that which the model represents. Thus an explanatory note should be annexed to the seer, specifying the number of chattacks contained in it, or other customary divisions; and likewise the number of seers contained in the maund, and of maunds in the candy (where such greater weight also is in use).

“Brass, copper, or tutenag are considered to be fit materials of which the models may be made.

“The accuracy of the models is to be carefully verified and regularly attested by competent persons.

“One set of the models is designed for immediate transmission to England, the other to be retained at the Presidency for subsequent and eventual transmission, as a duplicate in case of miscarriage of the first despatch. The two sets accordingly are to be assorted and separately packed.

“If models of Measures of capacity for meting corn or liquids cannot be provided and forwarded without too great inconvenience, the desired information may be supplied by a careful ascertainment and report of the liquid contents, as corresponding either to a known standard of the like sort, or to cubic inches. Accurate models would however be more satisfactory.

“In an explanatory letter accompanying the transmission of the models, you will add such information as you may possess, or can procure, upon the general object of these instructions, with any observations which may occur to you, as throwing light upon the subject.”

Such was the Circular issued by the Court of Directors, in obedience to which numerous Standards, duly attested, were transmitted to London with accompanying explanations. These packages, as

they arrived, were committed to the care of the Author of the *Cambist* for the purposes intimated in the following letter, addressed to him by the SECRETARY OF THE HONOURABLE COMPANY.

COPY OF THE SECRETARY'S LETTER.

East India House, August 2, 1822.

SIR,

It having been suggested to the Court of Directors of the East India Company, that several specimens of Weights and Measures, which have been, and are expected to be received from the different settlements in the East Indies, may be trusted to you for examination and comparison, I am directed, in accordance with that suggestion, to acquaint you that such of the said specimens as have been received will be delivered to you upon your making application at this house for that purpose, and upon your giving a receipt for the same, specifying that they are the property of the East India Company, and will be returned when required.*

A similar communication will be made to you upon the arrival of any further articles of the same description.

I am, Sir,

Your most obedient humble Servant,

JOSEPH DART, *Sec.*

To Dr. KELLY,
Finsbury Square.

In pursuance of the foregoing regulations all the Standards received from India were carefully compared with English Standards, by the Author of the *Cambist*; and his principal experiments were verified by the following eminent Authorities, viz. ;—the Weights by ROBERT BINGLEY, Esq., F.R.S., the King's Assay-Master of the Mint; and the Measures by EDWARD TROUGHTON, Esq., F.R.S.; both of whom had zealously co-operated in comparing the Standards sent to Government from other parts of the world.

* This condition of returning the standards has been fulfilled; and they are deposited at the India House in a commodious cabinet constructed for their reception; similar to the cabinet erected at the London Mint for preserving the foreign standards transmitted to Government.

As the results of the experiments on Indian Standards were not obtained in time to be incorporated in the Second Edition of the *Cambist*, they have been inserted as Supplements to that work, and are now more perspicuously arranged in the present publication with other valuable documents.

It should be added that the Despatches which accompanied the Standards from India were very full and explanatory, not only in the specifications of Metrology required in the Circular, but also in stating the Commercial Regulations, and Trading Practice of numerous Places, concerning which nothing official or authentic had been previously published.

These augmentations to the commercial knowledge of India are included in the present Work, together with various scientific documents of great practical utility, among which may be mentioned Outlines of Indian Astronomy, in elucidation of the Dates, Eras, and Calendars of several Oriental nations, as more fully stated in the following Table of Contents.

In short, no endeavours have been spared to render the work useful to all persons concerned in Indian affairs, whether civil or military, nautical or commercial.*

* The commercial and scientific works consulted on the present occasion, are chiefly those of Messrs. COLEBROOKE, STEVENS, MILBURN, and THORNTON; likewise Sir JOHN MALCOLM's Memoir of Central India, and PROFESSOR PAUCTON's *Métrologie, ou Traité des Mesures, Poids, et Monnoies des Anciens Peuples et des Modernes*.

Grateful mention should also be made of much valuable information received from official authorities at the India House; as well as from the Records of the Company, to which the author has had access, by permission of the Chairman, WILLIAM ASTELL, ESQ, M.P. who, from the beginning, essentially promoted the undertaking.

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ON

ORIENTAL MEASURES OF TIME.

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EXPLANATION

OF

CERTAIN CHARACTERS USED IN THIS WORK.

- + signifies Addition, as $6 + 2$ denotes that 2 is to be added to 6.
 — signifies Subtraction, as $6 - 2$ denotes that 2 is to be subtracted from 6.
 $\times$ signifies Multiplication, as 6×2 denotes that 6 is to be multiplied by 2.
 $\div$ signifies Division, as $6 \div 2$ denotes that 6 is to be divided by 2 or $\frac{6}{2}$.
 $=$ signifies Equality, as $6 + 2 = 8$; $6 - 2 = 4$; $6 \times 2 = 12$; and $6 \div 2 = 3$.
 $:$:: signifies Proportion, as $2 : 4 :: 6 : 12$ denotes that 2 is to 4 as 6 to 12.
 The Comma (,) placed before any Figure shews that the Number is a decimal Fraction: thus ,5 denotes $\frac{5}{10}$ or $\frac{1}{2}$; also, 6,25 means $6\frac{25}{100}$ or $6\frac{1}{4}$.

BRITISH MONIES, WEIGHTS, & MEASURES.

As the Weights, Measures, and Monies of India are here described by comparing them with those of England, the latter should be previously explained; and the more especially as they are in common use in the Presidencies; and likewise as alterations have been lately enacted in British Measures of Capacity, called *Imperial Measures*, which may require explanation.

BRITISH MONIES AND COINS.

ACCOUNTS are kept in the British Empire in Pounds, Shillings, Pence, and Farthings, which are all real Coins, as well as Monies of Account, and are denominated *Sterling*.

THE GOLD COINS are the Guinea of 21 Shillings, with Halves and Thirds in proportion; the Sovereign of 20 Shillings, with the Half and Double Sovereign in proportion.

THE SILVER COINS are Crowns of 5 Shillings, with Half Crowns, Shillings, and Sixpences in proportion.

COPPER COINS are Pence, Halfpence, and Farthings.

FINENESS OF GOLD AND SILVER.

The Fineness of Gold is expressed in Carats and Grains, the Pound or other Weight being divided into 24 Carats, and the Carat into 4 Grains.

The Fineness of Silver is expressed in Ounces and Pennyweights, the Pound being divided into 12 Ounces, and the Ounce into 20 Pennyweights.

STANDARDS OF GOLD AND SILVER.

THE STANDARD or legal Fineness of Gold is 22 Carats fine and 2 of alloy, which may be expressed $\frac{22}{24}$ or $\frac{11}{12}$, answering to the decimal 91.66, which in Indian Coins is expressed 91.66 *Touch*, that is, $91\frac{66}{100}$ of pure gold and $8\frac{33}{100}$ of alloy, making together 100.

THE STANDARD of British Silver is 11 Oz. 2 Dwt. of pure metal and 18 Dwt. of alloy, making together 1 lb. Troy. This may be expressed $\frac{22}{24}\frac{2}{4}\frac{2}{0}$, or $\frac{37}{40}$ = the decimal 91.25, which in Indian Mints is expressed $91\frac{1}{4}$ *Touch*, or $91\frac{25}{100}$ of pure silver and $8\frac{75}{100}$ of alloy, making together 100.

RATE OF COINAGE.

GOLD is coined at the rate of $44\frac{1}{2}$ Guineas to a Standard Pound Troy, with Halves, &c. in proportion; also at the rate of $46\frac{2}{4}\frac{9}{0}$ Sovereigns to the same, with their divisions and multiples in proportion. Hence the Mint Price of Gold is £3 17s. $10\frac{1}{2}d.$ per Ounce Standard.

SILVER is coined into 66 Shillings from a Pound Troy of Standard Metal, with divisions and multiples in proportion. Hence the Mint Price of Silver is 5s. 6d. per Oz. Standard.

This rate of Silver Coinage was begun in 1816, prior to which time the Mint Price was 5s. 2d. per Ounce Standard; and hence 31 Shillings of the old rate are equal to 33 of the new.

COPPER is coined in the proportion of 24 Pence to the Pound Avoirdupois. Thus the Penny = $10\frac{2}{3}$ Drams Avoirdupois, or $291\frac{2}{3}$ Grains Troy, and the other pieces in proportion.

Copper Coin is not a legal tender for more than *Twelve Pence*, nor Silver Coin for more than *Five Pounds*. Hence Gold Coin, being a legal tender to any amount, is considered the standard of value.

The following is the full weight of the Gold and Silver Coins.

GOLD COINS.		SILVER COINS.	
<i>Old Coinage.</i>		<i>Old Coinage.</i>	
	dwts. grs.		dwts. grs.
Guinea	5 9 $\frac{3}{8}$ $\frac{9}{9}$	Shilling	3 20 $\frac{2}{3}$ $\frac{8}{1}$
Half Guinea	2 16 $\frac{6}{8}$ $\frac{4}{9}$	Sixpence	1 22 $\frac{1}{3}$ $\frac{4}{1}$
Seven Shilling Piece	1 19 $\frac{1}{8}$ $\frac{3}{9}$	Crown	19 8 $\frac{1}{3}$ $\frac{6}{1}$
		Half Crown	9 16 $\frac{8}{3}$ $\frac{1}{1}$
<i>New Coinage.</i>		<i>New Coinage.</i>	
	dwts. grs.		dwts. grs.
Sovereign ..	5 3 $\frac{1}{6}$ $\frac{7}{2}$ $\frac{1}{3}$	Shilling	3 15 $\frac{3}{1}$ $\frac{1}{1}$
Half Sovereign ..	2 13 $\frac{3}{6}$ $\frac{9}{2}$ $\frac{7}{3}$	Sixpence	1 19 $\frac{7}{1}$ $\frac{1}{1}$
Double Sovereign .	10 6 $\frac{3}{6}$ $\frac{4}{2}$ $\frac{2}{3}$	Crown	18 4 $\frac{4}{1}$ $\frac{1}{1}$
Five Sovereign Piece	25 16 $\frac{2}{6}$ $\frac{3}{2}$ $\frac{2}{3}$	Half Crown	9 2 $\frac{2}{1}$ $\frac{1}{1}$

Gold Coins are allowed by law to pass under the above full weight. Thus the Guinea, weighing 5 Dwts. 8 Grs.; the Sovereign, 5 Dwts. 2 $\frac{3}{4}$ Grs.; and their divisions in proportion, are a legal tender.

REMEDY OF THE MINT.

The Remedy of the Mint, according to the law of 1815, for Gold Coins is 12 Grains per lb. in the weight, and $\frac{1}{16}$ of a Carat in the fineness; and for Silver Coins 1 Dwt. per lb. in the weight, and the same in the fineness.

The Remedy for Copper Coins is $\frac{1}{40}$ of the weight.

PROPORTIONS BETWEEN BRITISH WEIGHTS.

1 lb. Troy = 5760 Grains Troy, and 1 lb. Avoirdupois = 7000 Grains Troy.

Hence 175 lb. Troy = 144 lb. Avoirdupois, and

175 oz. Troy = 192 oz. Avoirdupois.

Also 1 oz. Avoirdupois = 437 $\frac{1}{2}$ gr. Troy,

1 dr. Avoirdupois = 27 $\frac{1}{3}$ $\frac{1}{2}$ gr. Troy.

The lb., oz., and gr. Apothecaries Weight are the same as those of Troy Weight.

TROY WEIGHT.

24 Grains (*gr.*)make 1 Pennyweight.....*dwt.*
 20 Pennyweights..... 1 Ounce*oz.*
 12 Ounces 1 Pound*lb.*

Grains.

24 = 1 Pennyweight.
 480 = 20 = 1 Ounce.
 5760 = 240 = 12 = 1 Pound.

AVOIRDUPOIS WEIGHT.

16 Drams (*dr.*)make 1 Ounce *oz.*
 16 Ounces..... 1 Pound *lb.*
 28 Pounds..... 1 Quarter *qr.*
 4 Quarters, or 112lbs..... 1 Hundred Weight.. *cwt.*
 20 Hundred Weight 1 Ton *ton.*

Drams.

16 = 1 Ounce.
 256 = 16 = 1 Pound.
 7168 = 448 = 28 = 1 Quarter.
 28672 = 1792 = 112 = 4 = 1 Hundred Weight.
 573440 = 35840 = 2240 = 80 = 20 = 1 Ton.

Other Denominations in this Weight.

A Firkin of Butter.. <i>lb.</i> 56	A Stone of Iron Shot,
_____ Soap 64	or Horseman's Wt. <i>lb.</i> 14
A Barrel of Anchovies . 30	A Truss of Straw 36
_____ Soap ....256	_____ New Hay .. 60
_____ Raisins ..112	_____ Old Hay .. 56
A Fother of Lead <i>cwt.</i> 19½	36 Trusses a Load.

WOOL WEIGHT.

7 Pounds (*lb.*)make 1 Clove*cl.*
 2 Cloves, or 14lb. 1 Stone*st.*
 2 Stone 1 Tod*td.*
 6 Tods and a Half 1 Wey*wy.*
 2 Wey 1 Sack*sa.*
 12 Sacks 1 Last*la.*

And a *Pack* of Wool is 12 Score, or 240 Pounds.

APOTHECARIES WEIGHT.

20 Grains (<i>gr.</i>)	make	1 Scruple	 <i>sc.</i> or ʒ
3 Scruples	.....	1 Dram	 <i>dr.</i> or 3
8 Drams	.....	1 Ounce	 <i>oz.</i> or ʒ
12 Ounces	.....	1 Pound	 <i>lb.</i> or lb

Grains.

20	=	1 Scruple.
60	=	3 = 1 Dram.
480	=	24 = 8 = 1 Ounce.
5760	=	288 = 96 = 12 = 1 Pound.

CLOTH MEASURE.

2 $\frac{1}{4}$ Inches	make	1 Nail	 <i>nl.</i>
4 Nails	.....	1 Quarter of a Yard	.. <i>qr.</i>
3 Quarters	.....	1 Flemish Ell	 <i>F. E.</i>
4 Quarters	.....	1 Yard	 <i>yd.</i>
5 Quarters	.....	1 English Ell	 <i>E. E.</i>
6 Quarters	.....	1 French Ell	 <i>Fr. E.</i>

Inches.

2 $\frac{1}{4}$	=	1 Nail.
9	=	4 = 1 Quarter.
36	=	16 = 4 = 1 Yard.
27	=	12 = 3 = 1 Flemish Ell.
45	=	20 = 5 = 1 English Ell.

LONG MEASURE.

3 Barley-corns (<i>b.c.</i>)	make	1 Inch	 <i>in.</i>
12 Inches	.....	1 Foot	 <i>ft.</i>
3 Feet	.....	1 Yard	 <i>yd.</i>
6 Feet	.....	1 Fathom	 <i>fath.</i>
5 $\frac{1}{2}$ Yards	.....	1 Rod, Pole, or Perch.	<i>r. p.</i>
40 Poles	.....	1 Furlong	 <i>fur.</i>
8 Furlongs	.....	1 Mile	 <i>mi.</i>
3 Miles	.....	1 League	 <i>lea.</i>
60 Geographical Miles, or	}	1 Degree	 <i>deg.</i> or °
69 $\frac{1}{8}$ British Miles			

Barley C.

[illegible]

144	Square Inches .. make	1	Square Foot.
9	Square Feet	1	Square Yard.
100	Square Feet	1	Sq. of flooring, roofing, &c.
30 $\frac{1}{4}$	Sq. Yds. or 272 $\frac{1}{4}$ Sq. Ft.	1	Square Rod or Perch.
40	Square Rods	1	Square Rood.
4	Square Roods, or 160 Square Perches, or 4840 Square Yards	1	Acre of Land.
30	Acres	1	Yard of Land.
100	Acres	1	Hide of Land.
640	Square Acres	1	Square Mile.

Inches.							
144 =	1	Foot.					
1296 =	9 =	1	Yard.				
39204 =	272 $\frac{1}{4}$ =	30 $\frac{1}{4}$ =	1	Pole.			
1568160 =	10890 =	1210 =	40 =	1	Rood.		
6272640 =	43560 =	4840 =	160 =	4 =	1	Acre.	

1728 Cubic Inches make 1 Cubic Foot.
 27 Cubic Feet 1 Cubic Yard.
 40 Feet of rough timber, or }
 50 Feet of hewn ditto } 1 Load or Ton.
 42 Cubic Feet 1 Ton of Shipping.

WINE MEASURE.

4 Gills (<i>gl.</i>)	make	1 Pint	 <i>pt.</i>
2 Pints	.....	1 Quart	 <i>qt.</i>
4 Quarts	.....	1 Gallon	 <i>gal.</i>
10 Gallons	.....	1 Anker of Brandy	 <i>ank.</i>
18 Gallons	.....	1 Rundlet	 <i>run.</i>
42 Gallons	.....	1 Tierce	 <i>tier.</i>
2 Tierces, or 84 Gallons	....	1 Puncheon	 <i>pun.</i>
63 Gallons	.....	1 Hogshead	 <i>hhd.</i>
2 Hogsheads	.....	1 Pipe or Butt	 <i>p.</i>
2 Pipes	.....	1 Tun	 <i>t.</i>

Pints.

2 =	1 Quart.
8 =	4 = 1 Gallon.
336 =	168 = 42 = 1 Tierce.
504 =	252 = 63 = $1\frac{1}{2}$ = 1 Hogshead.
672 =	336 = 84 = 2 = $1\frac{1}{3}$ = 1 Puncheon.
1008 =	504 = 126 = 3 = 2 = $1\frac{1}{2}$ = 1 Pipe.
2016 =	1008 = 252 = 6 = 4 = 3 = 2 = 1 Tun.

ALE AND BEER MEASURE.

2 Pints (<i>pt.</i>)	make	1 Quart	 <i>qt.</i>
4 Quarts	.....	1 Gallon	 <i>gal.</i>
9 Gallons	.....	1 Firkin	 <i>fir.</i>
2 Firkins	.....	1 Kilderkin	 <i>kil.</i>
2 Kilderkins	.....	1 Barrel	 <i>bar.</i>
1 Barrel and $\frac{1}{2}$, or 54 Gallons.		1 Hogshead	 <i>hhd.</i>
2 Barrels	.....	1 Puncheon	 <i>pun.</i>
2 Hogsheads	.....	1 Butt	 <i>but.</i>
2 Butts	.....	1 Tun	 <i>t.</i>

Pints.

2 =	1 Quart.
8 =	4 = 1 Gallon.
72 =	36 = 9 = 1 Firkin.
144 =	72 = 18 = 2 = 1 Kilderkin.
288 =	144 = 36 = 4 = 2 = 1 Barrel.
432 =	216 = 54 = 6 = 3 = $1\frac{1}{2}$ = 1 Hogshead.
576 =	288 = 72 = 8 = 4 = 2 = $1\frac{1}{2}$ = 1 Puncheon.
864 =	432 = 108 = 12 = 6 = 3 = 2 = $1\frac{1}{2}$ = 1 Butt.

DRY or CORN MEASURE.

2 Pints (<i>pt.</i>)	make	1 Quart	 <i>qt.</i>
2 Quarts	.....	1 Pottle	 <i>pot.</i>
2 Pottles	.....	1 Gallon	 <i>gal.</i>
2 Gallons	.....	1 Peck	 <i>pk.</i>
4 Pecks	.....	1 Bushel	 <i>bu.</i>
4 Bushels	.....	1 Coom	 <i>co.</i>
2 Cooms, or 8 Bushels	.....	1 Quarter	 <i>qr.</i>
4 Quarters	.....	1 Chaldron	 <i>ch.</i>
5 Quarters	.....	1 Wey or Load	 <i>wey.</i>
2 Weys	.....	1 Last	 <i>la.</i>

Pints.

8 =	1 Gallon.
16 =	2 = 1 Peck.
64 =	8 = 4 = 1 Bushel.
256 =	32 = 16 = 4 = 1 Coom.
512 =	64 = 32 = 8 = 2 = 1 Quarter.
2560 =	320 = 160 = 40 = 10 = 5 = 1 Wey.
5120 =	640 = 320 = 80 = 20 = 10 = 2 = 1 Last.

TIME.

60 Seconds (<i>se.</i>)	make	1 Minute	 <i>mi.</i>
60 Minutes	.....	1 Hour	 <i>ho.</i>
24 Hours	.....	1 Day	 <i>da.</i>
7 Days	.....	1 Week	 <i>wk.</i>
4 Weeks	.....	1 Month	 <i>mo.</i>
13 Months, 1 Day, 6 Hours, or	}	.....	1 Year
12 Calendar Months, or			
52 Weeks			

Seconds.

60 =	1 Minute.
3600 =	60 = 1 Hour.
86400 =	1440 = 24 = 1 Day.
604800 =	10080 = 168 = 7 = 1 Week.
2419200 =	40320 = 672 = 28 = 4 = 1 Month.
31557600 =	525960 = 8766 = 365 $\frac{1}{4}$ = 1 Year; or, more accurately, 365 d. 5 h. 48 m. 48 s.

To know the days in each month, observe—

Thirty days hath September, April, June, and November;
 February hath twenty-eight alone; and all the rest have thirty-one;
 Except in Leap Year, at which time, February's days are twenty-nine.

COMPARISON BETWEEN AVOIRDUPOIS AND TROY WEIGHT.

Avoirdupois Weight.		Troy Weight.
1 Dram	=	$27\frac{1}{3}\frac{1}{2}$ Gr.
1 Oz.	=	$437\frac{1}{2}$ Gr.
1 lb.	=	7000 Gr.
192 Oz.	=	175 Oz.
144 lb.	=	175 lb.

In weighing the precious metals, where great minuteness is required, the Troy Grain is divided into 20 Mites, 480 Doits, 960 Perlots, &c.

DIAMOND AND PEARL WEIGHTS.

Diamonds and other precious stones are weighed by *Carats*, each Carat being divided into Halves, Quarters, Eighths, and Sixteenths. This Carat equals $3\frac{1}{6}$ Gr. Troy.

Pearls are also weighed by the Troy Standard; but the Pennyweight is divided by 30 Grains instead of 24, and the Ounce answers to 600 Pearl Grains. Hence 4 Troy Grains equal 5 Pearl Grains.

THE NEW BRITISH IMPERIAL MEASURE,
ENACTED 1st JANUARY, 1826.

This is an Act declaratory of the legality of the existing Standards of Weight and Long Measure; but it orders the abolition of Wine, Ale, and Corn Measures, and the establishment of one Measure only in their stead, which is to be called the *Imperial Measure*.

The proportions between the old and new Measures are taken from the cubic contents of their respective Gallons, which are as follow :

	Cubic Inches.	
The Wine Gallon ..	231	} with their divisions and multiples in proportion.
The Ale Gallon ...	282	
The Corn Gallon ..	268.8	
The Imperial Gallon,	277.274	

From the preceding contents of the different Gallons the following Table is constructed.

TABLE OF FACTORS FOR CONVERTING OLD MEASURES INTO NEW, AND THE CONTRARY.

	By Decimals.			By Vulgar Fractions.		
	Corn Measure.	Wine Measure.	Ale Measure.	Corn Measure.	Wine Measure.	Ale Measure.
To convert Old Measures to New	.96943	.83311	1.01704	$\frac{31}{32}$	$\frac{5}{6}$	$\frac{60}{59}$
To convert New Measures to Old	1.03153	1.20032	.98324	$\frac{32}{31}$	$\frac{6}{5}$	$\frac{59}{60}$

USE OF THE ABOVE TABLE.

EXAMPLE I. Reduce 63 Gallons Wine Measure to Imperial Measure.

$63 \times .83311 = 52.486$; or $63 \times \frac{5}{6} = 52\frac{1}{2}$ Imperial Gallons nearly.

EXAMPLE II. Reduce 8 Bushels Imperial Measure to Winchester Measure.

$8 \times 1.03153 = 8.25224$; or $8 \times \frac{32}{31} = 8\frac{1}{4}$ Winchester Bushels nearly; or, more accurately, 8 of the latter = $7\frac{3}{4}$ of the former.

The new Coal Bushel, duly heaped, is to contain 2816.459 Cubic Inches, which is only $1\frac{1}{2}$ Inch more than the old.

The *Imperial Gallon* is to contain 10 lb. Avoirdupois Weight of distilled water, weighed in air, at the temperature of 62° of Fahrenheit's thermometer, the barometer standing at 30 Inches.*

* For the Laws, and other particulars relative to this intended alteration of Measures, see vol. i. p. 387 of *The Universal Cambist*.

AN ACCOUNT
OF THE
MONIES, WEIGHTS, AND MEASURES
OF THE
East Indies,
AND OTHER BRITISH SETTLEMENTS IN ASIA.

ARRANGEMENT.

With a view to explain the various subjects of this work in a clear and systematic manner, it is deemed proper to begin with the Monies only of the three Presidencies, viz. Calcutta, Madras, and Bombay; and then to state their Weights and Measures, together with the Weights, Measures, and Monies of the numerous other Trading Places in Asia, arranged in alphabetical order.

HISTORICAL VIEW OF THE MONIES OF INDIA.

In order to understand the present state of the Monies and Mint Regulations of the Presidencies of India, some general view of their history seems necessary.

These Monies or Coins, although consisting but of few denominations, are extremely various in their intrinsic value, owing to the establishment of numerous mints by different Authorities, both native and foreign. Before this variety took place, that is, while the Mogul Emperor was the sole sovereign of Hindostan, the monetary system was very simple and uniform. There was, throughout his dominions, but one kind of Silver Coin, denominated the *Sicca Rupee*, as being of a certain weight called the *Sicca*, which was the standard or unit for sizing all other weights. It answered to $179\frac{2}{3}$ English Grains, and was divided into 10 Massa, and also, like the Rupee, into 16 Annas, and each Anna into 12 Pice.

There were, however, Gold Coins, particularly the *Mohur*, which was of the same weight as the Sicca Rupee, and both were of extreme fineness. 1 Mohur generally passed for 16 Sicca Rupees; but this proportion varied according to the market price of Gold, as Silver was the measure of value.

When the native Princes and other Powers established mints in their respective Territories, they professed to follow the standard of the Emperor; but, in the course of time, most of them varied from it, particularly in the purity of their Coins. This diversity in the currency rendered the employment of *Shroffs* necessary, who are a kind of money brokers and assayers, appointed to set a value upon such Coins as require examination; and these officers are still very numerous and necessary.

With a view to reduce those various Coins to a uniform standard, an imaginary money was adopted, called the *Current Rupee*, to which all others were to be compared before they were entered into merchants' books. This ideal standard took its proportion from the Sicca Rupee, newly coined, 100 of which were reckoned to equal 116 Current Rupees. Such difference, or per-centage, was called the *Batta*, a term used in the comparison of all other Rupees with this imaginary standard.

It may be observed that, had the value of the Sicca Rupee been preserved uniform, it might have superseded the necessity of the Current Rupee, but it was subject to frequent alterations. Thus, during the first year after coinage, it bore the Batta of 16 per cent.; during the second year it was reduced to 13; and during the third and subsequent years the Batta was only 11 per cent. Then such Coins were denominated *Sunat Rupees*.

These different values were ascertained by the date of the Coin, as each piece was stamped with the year of its mintage; that is, according to the number of *suns* the Emperor had reigned, each year being called a sun.

Such was the confused state of the Monies of India until about the middle of the last century, when the East India Company commenced a reform of the Coins and Currency in Bengal, which has been since continued there from time to time, as well as at the other Presidencies ; with all due attention to pre-existing contracts.

BENGAL REGULATIONS RELATIVE TO COINS, MONIES,
AND MINT PROPORTIONS.

In 1773 a Regulation was enacted at Calcutta, by the Governor General in Council, that Rupees coined in future at that mint should bear the impression of the *nineteenth sun*, it being the 19th year of the Emperor *Shah Aulum's* reign. Such Coins were minted at the full standard of the Emperor's Coins ; but, with a view to put an end to the confusion of altering the value of those Coins annually, it was ordered that, whenever they became worn to a certain degree, they should be put out of circulation, and re-coined, or sold as bullion. Thus all new Rupees continued to be marked as of the 19th sun, and such became the only legal tender of payment throughout the provinces of Bengal, Bahar, and Orissa.

In 1793 an important Regulation took place in the mints of Calcutta, Patna, Dacca, and Moorshedabad, in which some necessary improvements were introduced in the proportions between Gold and Silver, and in the quantity of Alloy ; still, however, keeping the Sicca Rupee at its full standard value with respect to the quantity of pure metal.

MINT PROPORTIONS OF 1793.

	Weight. Gr. Troy.	Touch. ‰ Cent.	Pure. Gr. Troy.
<i>Nineteenth Sun Gold Mohur</i> . .	190.894	99.25	189.466
<i>Nineteenth Sun Sicca Rupee</i> . .	179.666	97.92	175.923

With Halves and Quarters in proportion.

Gold Mohurs coined at Calcutta in 1769, and those coined after 1792 there and at the subordinate mints, before mentioned, were declared a legal tender in all public and private transactions throughout the provinces of Bengal, Bahar, and Orissa, at the rate of 16 Sicca Rupees of the nineteenth sun for 1 such Mohur.

In 1803 Government ordered an extensive Silver Coinage to be struck at the mint of Furruckabad, for Agra, and certain Ceded and Conquered Provinces, according to the following standard.

	Wt. Gr.	Touch.	Pure Silver.
<i>Lucknow Rupee of the 45th Sun.</i>	173	95.5	165.215
With Halves and Quarters in proportion.			

In 1812 a Silver Coinage was ordered to be struck at Benares, for the use of that Province, and certain Ceded and Conquered Districts, according to the following standard.

	Wt. Gr.	Touch.	Pure Silver.
<i>Benares Rupee</i>	175	96.5	168.875
With Halves and Quarters in proportion.			

The above standards, however, were modified in 1819, and the Furruckabad mint ordered to supply Benares and its neighbouring Districts.

	Wt. Gr.	Alloy.	Pure Silver.
<i>New Furruckabad Rupee</i> ..	180.234	15.019	165.215
With Halves and Quarters in proportion.			

It may be observed that the last modification consisted only in the increase of Alloy, in order to render the Coins more hard and durable.

In December, 1818, a Regulation was passed for altering the standard of the Calcutta Sicca Rupee and Gold Mohur, which system is likely to continue permanent.

The following are extracts from the Regulation of 1818.

“ The high standards established (in 1793) for the Gold Mohur and Sicca Rupee, having been found productive of many inconveniencies, inasmuch as they are ill calculated to resist the wear and defacement to which Coins are necessarily exposed ; it has been resolved to rescind the provisions of former Regulations, and to coin in future Money of the proportions hereafter to be specified.”

“ As a reduction in the value of the Sicca Rupee, from its being in great measure the Money of Account, both in public and private transactions, would necessarily change the terms of all existing contracts, and might be productive of embarrassment and trouble, it has been determined to leave the Rupee unaltered. The New Calcutta Sicca Rupee will consequently contain the same quantity of fine Silver as that heretofore struck, and being of the same intrinsic value will circulate on the same terms.”

“ The mint proportions of Gold and Silver being, it is believed, inaccurately estimated at present, and it being desirable that an uniformity in this respect should be introduced at the three Presidencies of Calcutta, Madras, and Bombay, it has been thought advisable to make a slight deduction in the intrinsic value of the Gold Mohur to be coined at this Presidency, in order to raise the relative value of fine Gold to fine Silver from the present rates of 1 to 14.861 to that of 1 to 15 ; the Gold Mohur will still continue to pass current at the present rate of 16 Rupees.”*

MINT PROPORTIONS OF 1818.

	Grains.	Alloy.	Pure Metal.
<i>Gold Mohur</i> —weight....	204.710	17.059	187.651
<i>Sicca Rupee</i>	191.916	15.993	175.923

With Halves and Quarters in proportion.

* This proportion of 16 to 1 arises from the difference of pure weight in the Coins ; for had they been alike, the mint and current proportions, viz. 15 to 1, would have been the same, as at the other Presidencies.

MADRAS.

In 1818 a new monetary system was ordered for this Presidency ; but as the old Currency is not yet wholly withdrawn from circulation, some account of it is necessary.

OLD CURRENCY.

80 Cash = 1 Fanam.

45 Fanams = 1 Star Pagoda.

The number of Fanams to the Pagoda has, however, varied from 35 to 46 Fanams, but in Exchanges between the old and new Currency 45 are reckoned.

The Coins in general circulation were—in Gold, Star Pagodas ; and in Silver, Arcot Rupees, struck at the Madras mint, according to the following standard.

	Wt. Gr.	Alloy.	Pure Metal.
<i>Star Pagoda</i>	52.85	8.44	44.39
<i>Arcot Rupee</i>	176.4	9.923	166.477

With Halves and Quarters in proportion.

The Pagoda is generally valued at 8s. sterling.

NEW CURRENCY.

12 Pice = 1 Anna.

16 Annas = 1 Rupee.

The following are the Mint Regulations of the new Coinage of 1818.

	Wt. Gr.	Alloy.	Pure Metal.
<i>Gold Rupee</i>	180	15	165
<i>Silver Rupee</i>	180	15	165

With Halves and Quarters in proportion.

There are also Double and Single Annas, the former containing $20\frac{5}{8}$ Grains of pure Silver, and $1\frac{7}{8}$ of Alloy, and the latter in proportion. One-third of the Gold Rupee is likewise coined in due proportion.

15 Silver Rupees pass for 1 Gold Rupee, and $3\frac{1}{2}$ Rupees of the new Currency for 1 Pagoda of the old.

BOMBAY.

Accounts are kept here in Rupees, Quarters, and Reas.

100 Reas = 1 Quarter.

4 Quarters = 1 Rupee.

Reas are imaginary Monies of Portuguese origin, and may be valued at one-fourth of a Farthing each. Their multiples form the inferior monies of Bombay. Thus—

2 Reas = 1 Urdee.

2 Urdees = 1 Dooganey, or Single Pice.

2 Dooganey = 1 Fuddea = 8 Reas.

With Double and Four Fuddea Pieces in proportion.

There is also the Doreea of 6 Reas, and the Anna of 25 Reas; the latter is imaginary.

The larger Coins are Gold Mohurs, and Silver Rupees, which have undergone various alterations from time to time; but it was not until the year 1800 that they were brought to one standard, viz. Weight 179.—Touch 92.—Pure Metal 164.68.

In 1824 the Coins of Bombay were raised to the same standard as those of Madras, viz. Weight 180.—Touch 91.666.—Pure Metal 165 Gr.; with Halves and Quarters in proportion.

There is also a Gold Coin of 5 Rupees, and another of 1 Rupee, all minted at the same standard.

15 Rupees pass here, as at Madras, for 1 Mohur, and the mint proportion between Gold and Silver, at the three Presidencies, is the same, viz. 15 to 1. (See Note, p. 15.)

* * Such is the present improved state of the Monies and Mint Regulations of the Presidencies; but there are numerous other Coins in India, issued by various Authorities, which ought to be also stated, and which are accurately described in the following Table, by *Benjamin Noton*, Esq. the Hon. Company's Assay Master at the Bombay Mint: a Table which is evidently the result of many years' laborious and scientific research.

BOMBAY CASTLE, 28th SEPTEMBER, 1826.—TERRITORIAL DEPARTMENT (FINANCE).

It having been found necessary, in consequence of the change in the Standard of the Bombay Rupee, announced in the Government Proclamation of the 6th October, 1824, to revise the calculation of the Assay Report of the 13th May, 1823, the following Report, to which some additions have been made, has been prepared, and is now published for general information.

ASSAY REPORT, shewing the Mint Standards of Bombay, Calcutta, Madras, and England, and the Weight, Purity, and intrinsic Value, by Assay, of all the Coins, either current in the Honourable Company's Territories under the Presidency of Bombay, or imported as Bullion.—21st August, 1826.

NAMES OF COINS.			ASSAY.			Value of 100 in the New Bombay Currency.	REMARKS.
			WEIGHT.	TOUCH.	PURE METAL.		
GOLD.			Grs. dec.	° Ct. dec.	Grs. dec.	Rupees dec.	
No.							
1	† Bombay Mohur	₹	180 ..	91.666	165 ..	1500 ..	} Mint Standard. } In the Coins of these Mints one Part of Gold represents 15 of Silver.
2	Calcutta..Ditto	₹	204.71	91.666	187.650	1705.918	
3	Madras ..Ditto	₹	180 ..	91.666	165 ..	1500 ..	
4	English Guinea	£	129.50	91.666	118.707	1079.158	} In the English Coins one Part of Gold represents 14.281 Dec. of Silver. Full Wt. 54 Gr. } Do. Do. 53½ Do. } Ditto .....Ditto ..Ditto. Do. Do. 222½ Do. } Imported as Bullion. } Current in Persian & Arabian Gulphs. } Current Value 8 Persian Rupees or } 10 Huzar Deenars.
5	Venetian or Sequin	£	53 ..	99.25	52.602	478.204	
6	Gubber or Dutch Ducat	£	53.25	98.25	52.318	475.619	
7	Joaneese or Portuguese Dollar	£	220.75	91.50	201.986	1836.238	
8	Persian Toman	£	73.50	97.25	71.477	649.796	
9	Ditto ..Ditto, new Currency..	£	68.904	97.25	67.009	609.172	
10	New Ekairee	₹	52.85	84 ..	44.394	403.581	} CARNATIC. This Coin was struck by Kishun Raj Wadder, Rajah of Mysore, in the Mint at Mysore. It is chiefly current in the Mysore and the Southern Districts of the Carnatic. This Coin was struck by Rajah Boodee Bussapa, at Biddunoor, about 100 years ago. This Coin, denominated Bhoolpuddee, or Head of the Idol, is of the same Coinage, with the Stamp a little different.
11	Old..Ditto	₹	52.62	84.375	44.398	403.619	
12	Bhol Ditto	₹	52.69	84.50	44.523	404.755	
13	Bhoolpuddee	₹	52.77	85 ..	44.854	407.768	

NAMES OF COINS.		ASSAY.			Value of 100 in the New Bombay Currency.	REMARKS.
GOLD.		WEIGHT.	TOUCH.	PURE METAL.		
No.		Grs. dec.	Gr Ct. dec.	Grs. dec.	Rupees dec.	
14	Bahaudry	52.72	84.50	44.548	404.985	This Coin was struck by Hyder Ally, about 50 or 60 years ago, at Seringapatam.
15	Funokee	52.80	84.625	44.682	406.20	This Coin was struck by the Sultan about 36 years ago. <i>The above six Coins are usually received into the Poona Treasury from the Districts of Ranee, Biddanoor, Koda, Lunkapoor, Navanoor, Gudduck, Dummall, Kanguhulla, Andoor, Kanigul, Nowlagund, &c.</i>
16	Guddapuddee	50.97	76.375	38.928	353.893	These Coins were struck by Esajee Ram, Mumleedar of the Paishwa, about 66 years ago, at Darwar and Nurgound, but the Coinage has been discontinued for the last 30 years.
17	Fudduck	50.77	76.375	38.775	352.505	
18	Kudvanajee	50.75	76.375	38.760	352.366	
19	Hallie Sicca	50.90	76.375	38.874	353.407	
20	Modapuddee	50.55	75.25	38.038	345.807	These Coins have little or no currency in this Province, but are circulated in the Camp Bazar to a small extent.
21	Rajaram Ekairree	52.80	84.125	44.418	403.80	
22	Bhatoree	50.50	75 ..	37.875	344.318	
23	Tomancien	26.12	84.625	22.104	200.945	This Coin was struck during the Government of Hyder, in the Mint at Bangalore. It has no very general circulation, but is occasionally received in payment of revenue.
24	Bangaloree	52.82	84.25	44.500	404.553	These Coins have little currency in these Provinces.
25	Mohomed Shaie	51.50	78.75	40.555	368.688	
26	Ventraturputkee	51.50	76.375	39.333	357.573	
27	Herponhillee	50.75	77.50	39.331	357.556	
28	Pavan Tharokee	52.89	84.375	44.623	405.672	Received for assay from the Collector in the Doab; current in the Southern Mahratta Country.
29	Nagar Tharokee	52.90	85.125	45.031	409.373	
30	Gharava Tharokee	53.85	85.25	45.907	417.337	
31	Bhut Padee	52.90	84.75	44.832	407.570	
32	Baha Tapee	54 ..	84.75	45.765	416.045	
33	Joona Elaye	52.50	84.375	44.296	402.698	
34	Navee Ekee	53 ..	84.50	44.785	407.136	
35	Centeroy Funams	5.82	59 ..	3.433	31.216	
36	Sultana Funams	5.87	58 ..	3.404	30.950	

NAMES OF COINS.		ASSAY.			Value of 100 in the New Bombay Currency.	REMARKS.
SILVER.		WEIGHT.	TOUCH.	PURE METAL.		
No.		Grs. dec.	¢ Ct. dec.	Grs. dec.	Rupees dec.	
37	† Bombay	180 ..	91.666	165 ..	100 ..	Current at Bombay, Surat, Kaira, Canara, and Soonda. Mint } Standard, } New Currency. Ditto Ditto. } In this new Coinage the Pound Weight Troy of Standard Silver is divided into 66s. (instead of 62s.) as before, making the relative proportion as above stated, viz. 1 of Gold to 14.231 of Silver.
38	Calcutta	191.916	91.666	175.921	106.619	
39	Madras	180 ..	91.666	165 ..	100 ..	
40	English Crown Piece	436.36	92.5	403.633	244.626	
41	Spanish Dollar	415 ..	89.375	370.906	224.791	Full Wt. 416 Gr. } Imported } Current in the Persian & Arabian Gulphs, as } and to a certain degree over the greater Do. 433 Do. } Bullion. } part of the known world. Standard Coin at Poona, current throughout the Deccan, and the Northern and the Southern Concan. Coined at Chandore, and is the Standard Coin of Candeeish; passes equi- valent with the Ankoosee Rs. current also in the Northern Concan. Current in Candeeish. Coined at Nassuck; bears a discount of 8 and 12 Annas per cent.; cur- rent in the Northern Concan and Candeeish. Coined at Bellapoor, current at Poona, Ahmednuggur, the Concan, &c. Coined at Bhatoree, near Ahmednuggur; current in the Deccan; is inferior to the Ankoosee Rupees by one per cent. Coined formerly at Poona, and is esteemed better than the Ankoosee Rupees by one per cent. Coined at Poona for mercantile purposes. Coined at Waubgaum; bears a discount with the Ankoosee Rupees of eight Annas per cent. Current in Candeeish; coined by Scindia; and is perhaps the same Coin as assayed under the name of the Berlianpoor Sicca. Coined at Chammergoondee, and bears a discount with the established Ankoosee of two per cent.
42	German Crown	430.25	83.375	358.720	217.406	
43	† Ankoosee Chinsoree. Rupee.	172.50	91.75	158.268	95.920	
44	† Chandore	172.25	91.50	157.608	95.920	
45	† Thoara	170 ..	91.50	155.550	94.273	
46	† Jeereeputka	171.6	90.25	154.869	93.860	
47	† Bellapoor	171.82	85 ..	146.047	88.513	
48	Bhatoree	171.3	87 ..	149.031	90.321	
49	Shree Sicca	172 ..	91.50	157.380	95.381	
50	Hallee Sicca	174.75	96.25	168.196	101.937	
51	Waubgaum	172.55	91.50	157.883	95.689	Coined at Bagulcota, current in the Doab and the Southern Concan. Coined at Vessalghur, current in the Southern Concan. Coined by Angreha, current in the Southern Concan.
52	Purkee	178.88	94.25	168.594	102.178	
53	Chambargoondee	171 ..	84.75	144.922	87.831	
54	Fursee	175 ..	94 ..	164.50	99.696	
55	Mullarshie	172.3	89 ..	153.347	92.937	
56	Mullarshie	171.30	90.25	154.598	93.695	
57	† Colaba or Alibag	172 ..	83.75	144.050	87.303	

NAMES OF COINS.		ASSAY.			Value of 100 in the New Bombay Currency.	REMARKS.
SILVER.		WEIGHT.	TOUCH.	PURE METAL.		
No.		Grs. dec.	Gr. Ct. dec.	Grs. dec.	Rupees dec.	
58	Shapoorie.....Rupee.	174 ..	87 ..	151.38	91.745	Coined at Shapoor, and produces 102 Ankoosee per cent. at Poona. This Coin was struck originally at Kittoor. This Mint has continued the Coinage during the last 25 years. It is current in the districts of Bettekeera, Belgaum, and l'adshapoor. Coined at Ougien; passes in Poona at a premium of two per cent. for Ankoosee Rupees; * current throughout Malwan.
59	Kittoor Shapoorie ....Ditto..	174 ..	86.25	150.075	90.954	
60	Ougien	175 ..	92.25	161.437	97.840	
61	Indore or Choleemaishwar Do.	172.66	92.25	159.278	96.532	
62	Govind Buksh	171.16	78 ..	133.504	80.912	Coined at Aurungabad; is issued in payment to the troops at 120 for 100 Company's Rupees. Coined at Nagpore, and is inferior at Poona to the Ankoosee Rupee by four per cent. The only Currency at Broach; current also at Surat, Kaira, &c. Coined formerly at Broach; now disappearing. Current in the Nabob's Districts, Kaira, &c.
63	Nagpore	166.73	86.5	144.221	87.406	
64	Broach	177.5	87.62	155.525	94.250	
65	Old Broach	177.6	94.25	166.879	101.138	
66	Cambay	179.50	81.88	146.974	89.075	Coined at Baroda, also current at Kaira, &c. Ditto.....Ditto by Futtey Sing, now disappearing. Coined formerly at Ahmedabad. Present Currency there; current also at Anjar, and throughout Cutch. Coined at Ahmedabad, current within the Walls of the City only. Coined at Anjar, current throughout Cutch. Ditto.....Ditto.....Ditto. Ditto at Porebunder.
67	Babasye	177 ..	84.88	150.237	91.053	
68	Walkersye	177.39	87.75	155.659	94.339	
69	Ashasye.....	176.50	86.5	152.672	92.538	
70	Mukunsye.....	176.62	87.5	154.542	93.662	
71	Wullubsye	175.56	85 ..	149.226	90.44	
72	Seeasye	177.86	83.50	148.513	90.007	
73	Doobsye	178 ..	88.125	156.862	95.68	
74	Ahmedabad Sicca	179.92	84 ..	151.132	91.598	
75	New....Ditto	180.75	85 ..	153.637	93.113	
76	Ahmedabad Hallee Do. Ditto..	177.75	97.75	173.750	105.303	
77	Cutch Couree	72.15	60.75	43.831	26.564	
78	Ditto Ditto Dessalsye, 1822..	72 ..	59 ..	42.48	25.745	
79	Porebunder	74.50	69.75	51.963	31.493	
80	Kattwar Jamsye	72.57	65.25	47.351	28.698	
81	Ditto Ditto, coined at Janagur	72.42	62 ..	44.900	27.212	

NAMES OF COINS.		ASSAY.			Value of 100 in the New Bombay Currency.	REMARKS.
SILVER.		WEIGHT.	TOUCH.	PURE METAL.		
No.		Grs. dec.	Gr. Ct. dec.	Grs. dec.	Rupees dec.	
82	Persian	159.12	94.50	150.368	91.132	Imported as Bullion, current in the Persian Gulph.
83	New Persian	141.3	94.50	133.528	80.926	Ditto.....Ditto.....Ditto.
84	† Persian Huzar Deenar	106.20	95.25	101.155	61.306	Ditto... ..Ditto.
85	Goa	168.50	86 ..	144.910	87.824	Ditto.....Ditto.
86	Mysore or New Holker Ditto..	173.56	94.25	163.580	99.139	Coined at Mysore, now disappearing.
87	Mulkapoor	173.2	71.75	124.271	75.315	Coined at Mulkapoor, & bears a discount of 12 per ct. with the Ankoosee.*
88	Meritch Hookaree ....Ditto..	172.6	84 ..	144.984	87.869	Coined at Meritch, bears a discount in Poona of five per cent.*
89	Narrainpet	172.5	80.50	138.862	84.159	{ A species of Hyderabad Rupee, coined at Narrainpet, but little known at Poona; rate uncertain, from 9 to 12 per cent. discount.
90	Timbourne	171.3	85.50	146.461	88.764	{ Ditto, coined at Timbourne by the late Sedaser Monkaizer; is inferior to the proper Ankoosee Rupee.
91	Waye Sicca	171.8	89.50	153.761	93.188	Ditto, coined at Waye, and bears a discount in Poona of one per cent.*
92	Jumkundie	175 ..	92 ..	161 ..	97.575	Coined at Jumkundee, and passes at a discount of two per cent.*
93	Berhanpoor	178.8	94.75	169.413	102.674	Coined by Scindia in Candeish.
94	Phoolsheree	171.7	91.50	157.105	95.215	{ A species of Ankoosee Rupee, coined at Poolsherb, but inferior to the regular Ankoosee by eight Annas per cent.*
95	Pertabghur	170.40	87.25	148.674	90.105	{ Coined at Pertabghur, a species of Ankoosee Rupee, but 19 per cent. inferior to it.
96	Emaumee	175 ..	95.50	167.125	101.287	{ The Emaumee Coin was struck by the Sultan, but is not current in this Province, and is seldom received by the Shroffs or Sabookars.
97	Rajah Pondicheree....Ditto..	176.16	94.75	166.911	101.158	{ This Coin was struck at Mysore during Poornya's administration. It is current, but not generally, in the Rancee Biddanoor District.
98	Punlee, old	170.60	63 ..	107.478	65.138	{ This Coin was struck by Kurweekar Maharaj, at Punalic, about 50 or 60 years ago. The Mint still continues. The Coin has very little currency in those Districts.
99	Nepaunee Perkane ..Ditto..	173 ..	75.75	131.047	79.422	This Coin was struck by Seddownjee Row.
100	Semboo ....Ditto ....Ditto..	172.75	79.75	137.768	83.495	Current in the Southern Mahratta Country.
101	Moodhole ..Ditto ....Ditto..	173 ..	57.50	99.475	60.287	{ This Coin was struck by the Melajee Row Modhulkur about 30 years ago; a very limited circulation.
102	Old Semboo Ditto ....Ditto..	174 ..	89.75	156.165	94.645	{ This Coin was struck by the Bhosla Family, of Sawantady, about 200 years ago.
103	Toragull Nelkantee ..Ditto..	170 ..	62 ..	105.40	63.872	{ This Coin was struck by Bhalasahib, of Toregull Synakhurga, about 50 years ago.

NAMES OF COINS.		ASSAY.			Value of 100 in the New Bombay Currency.	REMARKS.
SILVER.		WEIGHT.	TOUCH.	PURE METAL.		
No.		Grs. dec.	Gr Ct. dec.	Grs. dec.	Rupees dec.	
104	Tokashie	173.16	94 ..	162.770	98.648	Current in the Ahmednuggur Districts.
105	Jyenuggee	172.68	90 ..	155.412	94.189	
106	Mannashie	169.50	90 ..	152.550	92.454	
107	Delhi	174.50	97.65	170.399	103.272	
108	Perkanee, newest	177.9	88 75	157.886	95.688	Current in the Sawant State; received for assay from the Political Agent there.
109	Spanish Independent Dollar ..	420.5	89.50	376.347	228.089	
110	† Karpooree	176 ..	89.25	157.080	95.20	Coined at Chili in 1817 by the Independents. Current at Karpoor, Raddy, Kuddiyara, Buckar, and } Provinces. Murshoraf
111	† Kora	170.40	73.75	125.670	76.163	
112	† Bhakry	176 ..	94 ..	165.44	100 206	
113	† Govindy	177 ..	90.612	160.383	97.201	
114	† Old Thuttayee	169 ..	98 ..	165.62	100.375	Do. Nuggurhatta.....Do. Do. Laikhana, Savan, Turthy, Boobuck, Arrody, Cur- } Do. rumpore, and Chand.....Do. Do. Shabunder, Dhurraza, Succara, and Kekrola.....Do. Do. Curranchey, Soonmaney, Dairaballa, and Supin .....Do. Do. Ellaza Tunda, Adamkhanee, Meerpoor, and Meertharia Do. Do. Woormerkoley, Jasoomaul, and Thur.....Do. Do. Sheekarpoor .....Do. Do. Tunda Mahomedkhaun, Bugna, Tunda, Meerpoor, } Do. Jattie, Talpoorawanayebunda, Cuddum, and Dhudy }
115	† Cursaney	170.75	72.50	123.793	75.026	
116	† Tundia	168 ..	74 ..	124.32	75.345	
117	† Anksayee	170.666	94.75	161.706	98.003	
118	† Shojahvully	176.10	89 ..	156.729	94.987	Scind Coins.
119	† Missoody	171.25	97.75	167.396	101.449	

* These Rates of Exchange were established previous to the Assay which was made in the year 1810, and may have been since corrected.

† These Coins, in the course of circulation, frequently receive numerous marks or chaps, and when thus disfigured are called Chappee, &c. and bear a discount, greater or less, according to circumstances.

‡ These Coins were not in any former Reports.

N. B. The present Bombay Rupee contains 32-100ths of a Grain of pure Silver more than the one it has superseded. It is distinguished by the date 1825.

ERRORS EXCEPTED.

(Signed) B. NOTON, Assay Master.

BOMBAY ASSAY OFFICE,

By Order of the Honourable the Governor in Council,

21st August, 1826.

(Signed) L. R. RIED, Acting Secretary.

The preceding six pages contain a full and correct copy of *Mr. Noton's Table of Assays*, with a series of figures prefixed, for the purpose of numbering the Coins, and thus affording a ready and convenient reference to each.

The first column shews the Gross Weight of each Coin; and this, multiplied by the Touch in the second column, cutting off the proper number of decimals, will give the pure Metal of the third column. Thus, 180 Grains, multiplied by $0.9166\frac{2}{3} = 165$ Grains = the pure Metal in the Bombay, or Madras Mohur (Nos. 1 and 3).

The fourth column is deduced from the third by multiplying the pure Grains by 100, and dividing by 11, if Gold; and by 165, if Silver.

COMPARISON OF COINS.

The comparative value of Coins is ascertained by their relative quantity of pure Metal. Thus, in the foregoing Table, the third column shews the proportion between any two Coins of the same metal, by reversing the number of pure Grains. For example—to compare Bombay Mohurs and English Guineas (Nos. 1 and 4), it is plain that 165 of the latter equal 118.707 of the former, and any other number in the same proportion. Again, in the Silver Table (Nos. 37 and 41), it is obvious that 165 Spanish Dollars equal 371.906 Bombay Rupees.

But in comparing Coins of different metals, allowance must be made for the established proportion between Gold Mohurs and Silver Rupees, which, at Calcutta, is 16 to 1, and at Bombay and Madras 15 to 1 (see Note, p. 15). Thus, to find the number of Sicca or Calcutta Rupees in an English Guinea (Nos. 38 and 4), begin with the Calcutta Mohur, and say—

$$\text{As } 187.65 : 16 :: 118.707 : 10.1215$$

that is, 10 Sicca Rupees, 1 Anna, 11 Pice, in a Guinea; but to find the number of Bombay, or Madras Rupees, say—

$$\text{As } 165 : 15, \text{ or as } 11 : 1 :: 118.707 : 10.7915$$

that is, 10 B.-Rs. 3 Qrs. $16\frac{1}{2}$ Reas; or 10 M.-Rs. 12 Annas, $3\frac{1}{2}$ Pice.

To compare British Coins with Indian, British Gold only comes into calculation, as Silver Coins are not a legal tender beyond a small sum; but Indian Silver Coins can be compared with British Gold, by first reducing the Rupees to Mohurs, as above, and dividing the pure Grains of Gold by 113.054, which is the number of such Grains in the Sovereign or Pound Sterling.

Hence the following proportions between their Monies are computed :—

The Calcutta Mohur is worth£1 13 2 $\frac{1}{4}$

The Bombay, or Madras Mohur... 1 9 2 $\frac{1}{4}$

dec.

One Pound Sterling is worth { 9.639 Sicca Rupees.
10.277 B. or M. Rupees.

dec.

Therefore 1 Sicca Rupee is worth...24.898 Pence Sterling.

And 1 Bombay or Madras Do. 23.352 Do.

Thus, the mint price of Silver in India is 5*s.* 2 $\frac{1}{4}$ *d.* Sterling per Ounce British standard, while in England it is 5*s.* 6*d.* (see p. 2), although the market price is mostly under 5*s.* per Ounce.

EXCHANGES OF INDIA.

The Par of Exchange between the various Places in the foregoing Table is seen by the comparative quantities of pure metal in their Currencies, but the Course of Exchange varies, as in other Countries, according to the demand for Bills; and there is generally a small difference of price between buying and selling Bills at the same Place, as there is in the purchase and sale of other articles, which may be seen by the following quotations.

COURSE OF EXCHANGE

Between the three Presidencies reciprocally, and between each of them and London, in the beginning of the year 1829.

AT MADRAS.

To buy.				To sell.	
s.	d.			s.	d.
1	9	On London .. at 6 months, per Madras Rupee	.....	1	8 $\frac{1}{2}$
1	8 $\frac{1}{2}$	 90 days .....	.....	1	8 $\frac{1}{4}$
1	8 $\frac{1}{4}$	 30 days .....	.....	1	8
....		On Bombay .. at 30 days, 100 B. Rupees = 100 M. Rupees			
....		On Bengal at 30 days, 100 S. Rupees = 110 M. Rupees			

AT BOMBAY.

To buy, s. d.		To sell. s. d.
1 9	On London ..at 6 months, per Bombay Rupee	1 9½
1 8½	 3 ditto	1 9
107½	On Calcutta...at 30 days sight, per 100 Sicca Rupees, 107	
100	On Madras .....ditto .....ditto.....	99

AT BENGAL.

1 11	On London ..at 6 months sight, per Sicca Rupee ..	1 11½
....	On Bombay ..at 30 days, per 100 B. Rs.	Sicca Rs. 93
....	On Madras ..at 30 days, per 100 M.Rs.....	85 to 90

The mode of calculating the above Exchanges is deemed too simple to require illustration ; but there is an internal Exchange at Madras, that of converting the old Currency to the new, which, in some cases, it may be necessary to exemplify.

INTERNAL EXCHANGES AT MADRAS.

3½ Rupees of the new Currency are exchanged for 1 Pagoda of the old, that is, 56 Annas for 45 Fanams, and Tables are published for this comparison ; but such may be dispensed with by using the above proportions, or, where the lowest denominations occur, the following FACTORS may be adopted with advantage; viz. 75 *Cash, old Currency, answer to 14 Pice, new Currency.*

EXAMPLES.

Reduce 97 Pagodas, 27 Fanams, 58 Cash (that is, 351418 Cash), old Currency, into Rupees, Annas, and Pice, new Currency, and the contrary.

Cash	Pice	Cash	Pice	Rupees	Annas	Pice
As 75	: 14	:: 351418	: 65598	= 341	10	6 new Currency.

Reverse Operation.

Pice	Cash	Pice	Cash	Pagodas	Fanams	Cash
As 14	: 75	:: 65598	: 351418	= 97	27	58 old Currency.

INTERNAL EXCHANGE OF OLD RUPEES.

The following Rates of Exchange were formerly established between the annexed Rupees, which however, except the Siccas, are now nearly out of circulation.

		R.	A.	P.
100 Sicca Rupees are equal to	Arcot	107	6	6
	Duss Massa, and old Bombay	105	7	3
	Mooney Soorte, and old Mochedan ..	106	6	9
	Patna, and old Sunat	104	8	1
	Sunat Fooley	102	10	5

From the above proportions to the Sicca Rupee, the relative value of each piece to any known Coin may be easily found.

INDIAN NOTATION AND NUMERATION.

In India, as in England, figures increase tenfold from the right hand to the left hand, but they differ in their Notation and Numeration. This difference may be exemplified by the nine digits, which in England are divided into periods of three figures, but in India into periods of two figures only, except the last three.

Thus, according to English Notation, they are pointed 987,654,321, and read—Nine Hundred and Eighty-seven Millions, Six Hundred and Fifty-four Thousand, Three Hundred and Twenty-one; but in India they are pointed 98,76,54,321, and read—Ninety-eight *Crores*, Seventy-six *Lacs*, Fifty-four Thousand, Three Hundred, and Twenty-one.

Hence it appears that 1 Lac = 100 Thousand, and 100 Lacs, or 10 Millions, = 1 Crore.

Thus a Lac of Current Rupees, at 2s. each, equals Ten Thousand Pounds Sterling, and a Crore equals a Million of Pounds Sterling.

Such is the mode in which the East India Company keep their large accounts at the Presidencies, and also as submitted to the British Parliament. Thus their sums of Indian Money are converted to Sterling, according to the following method, by reducing all Indian denominations to Current Rupees at 2s. each. Then dividing the number by 10, and pointing in the English way.

EXAMPLE.

Reduce into Pounds Sterling 26,95,55,665 Sicca Rupees.

Batta, 16 per Cent. 4,31,28,906 add

Sum of Current Rupees - 31,26,84,571

Pounds Sterling - - - - £31,268,457 : 2s.

The following is a copy of the Indian Numeration Table, from THE LILAWATI of BHASCHARA ACHARYA, as translated from the Sanscrit by Dr. TAYLOR, of Bombay, 1816.

Parardha	a hundred thousand billions.....	1
Madhya	ten thousand billions	0
Antya	a thousand billions	0
Jaladhi	a hundred billions.....	0
Sankha	ten billions	0
Mahapadma	a billion.....	0
Nikharva	a hundred thousand millions ..	0
Kharva	ten thousand millions	0
Abja	a thousand millions	0
Arbuda	a hundred millions	0
Kotya (Crores) ..	ten millions	0
Pryuta	a million	0
Laksha (Lacs) ..	a hundred thousand	0
Ayuta	ten thousand	0
Sahasra	a thousand	0
Shata	a hundred	0
Dasa	ten.....	0
Eka	unit	0

The above Table, which numerates a hundred thousand billions, or 18 places of figures, is continued in other books up to 32 places; but the Indian mode of Numeration gives a distinct name to every digit above Millions, whereas, in English Numeration, the Table may be raised to any height by adding the words Trillions, Quadrillions, Quintillions, &c. to every sixth figure after Millions. It is however remarkable that the French, and some other Nations, advance from Hundreds of Millions to Trillions, Quadrillions, &c. by pointing every third figure only.

It does not appear that in India there is any such mode of high calculations, or at least any such regular system of Notation by periods of six or three figures. It may however be observed, that the modern Hindoos have in some instances altered the names of their Numbers from the above Table of the Sanscrit (their ancient language), and have also discontinued some of the intermediate terms, such as the *Pryuta* between the *Kotya* or *Crore* and the *Laksha* or *Lac*, &c. In some places they call 100 Crores 1 Mas, and 100 Mas 1 Mah-mas, &c.

ORIENTAL METROLOGY,

COMPRISING

THE MONIES, WEIGHTS, AND MEASURES

OF

THE EAST INDIES,

AND OF OTHER TRADING PLACES IN ASIA AND AFRICA.

NOTE.—The Places are alphabetically arranged, with their Latitudes and Longitudes annexed.

ACHEEN.

(A Town and Province of Sumatra.)

Lat. 5° 35' N.—Lon. 95° 45' E.

Accounts are kept here in Tales, Pardows, Mace, and Copangs.

4 Copangs	} make	1 Mace
4 Mace ..		1 Pardow
4 Pardows		1 Tale.

These coins vary in their intrinsic value. The Tale, however, may be averaged at 19s. sterling, and the inferior monies in proportion. Spanish Dollars and Indian Rupees pass current here at a variable exchange. Gold in dust is reckoned at 92 Touch fine.

The Cash is a small piece of lead, of very inferior value, being from 1500 to 2500 for 1 Mace.

WEIGHTS.

4 Copangs	} make	1 Mace.. =	gr. Troy.* 9.27
8 Mace ..		1 Pagoda =	74.1
2 Pagodas		1 Tale .. =	148.2
5 Tales ..		1 Buncal. =	741.0
20 Buncals.		1 Catty . =	30 oz. 17 dwt. 12 gr. Troy.
200 Catties .		1 Bahar . =	3 cwt. 3 qr. 3½ lb. Avoirdupois.

* In all the Tables in this Work gr. signifies English Grains Troy Weight, and where dr. occurs the proportions are understood to be Avoirdupois Weight. (See the comparison between those denominations, p. 9.)

The contents of the foregoing weights, in English denominations, are differently stated by respectable authorities; and as no standards have been received in London from Acheen, the uncertainty still remains.

Rice is weighed by the Maund of 21 Bamboos, and each Bamboo is divided into 5 Cauls, and sometimes 4. The Maund answers to 75 lb. Avoirdupois.

MEASURES OF CAPACITY.—The largest measure is the Coyang, which is divided into 10 Gunchas, 100 Nellies, and 800 Bamboos.

The Bamboo, filled with water, weighs 3 lb. 10 oz. 10 dr. avoirdupois.

The principal measure of length is the Cobitt or Cubit of 18 English Inches, and a Corge of cloth contains 20 Pieces.

AHMEDABAD.

(*A City in the Province of Gujrat.*)

Lat. 22° 31' N.—Lon. 72° 59' E.

For the MONIES of Ahmedabad see *Assay Report*, Nos. 74, 75, and 76, p. 21.

GOLD AND SILVER WEIGHT.

		1 Ruttee =	^{gr.} 2.015
3 Ruttees	} make	1 Val	= 6.045
32 Vals		1 Tola	= 193.440

COMMERCIAL WEIGHT.

		lb.	oz.	dr.
1 Seer	=	1	0	14½
40 Seers make 1 Maund	=	42	4	13

The Seer is divided into halves, quarters, eighths, &c.

LONG MEASURE.

	Eng. Inches.
Guz for Cloth.....	27½
" for Velvet	34½
" for Artificers	23½

. Grain and liquids in this part of India are generally sold by weight.

AHMEDNUGGUR.

(A City in the Province of Aurungabad.)

Lat. 23° 35' N.—Lon. 73° E.

For the MONIES of Ahmednuggur see *Assay Report*, No. 104 to 107, p. 23.

GOLD AND SILVER WEIGHT.

		1 Gonje =	gr. 1.95
2 Gonjes	} make	1 Wall =	3.9
4 Walls.		1 Massa =	15.7
12 Massas		1 Tola =	188.4
24 Tolas.		1 Seer =	4521.6

COMMERCIAL WEIGHT.

		1 Chittack =	lb. oz. dr. 0 1 15½
16 Chittacks	} make	1 Seer .. =	1 15 8
40 Seers ..		1 Maund . =	78 15 12
3 Maunds .		1 Pullah . =	236 15 4
20 Maunds .		1 Candy . =	1577 2 4

DRY MEASURE.

		1 Pao =	lb. oz. dr. 0 10 13
18 Tanks ..	} make	1 Seer =	2 11 6
4 Paos....		1 Adholee. =	5 6 12
2 Seers ..		1 Pylee .. =	10 13 8
2 Adholees		1 Maund . =	130 2 0
12 Pylees .		1 Pullah.. =	325 5 0
2½ Maunds .		1 Candy.. =	2602 8 0
8 Pullahs .			

The Seer of Weight equals 80 Ankosee Rupees, in which there are 73½ Tolas, gold weight. (See *Assay Report*, No. 43.)

The Seer of Capacity is calculated on the grain called Bajree, of which the Seer weighs 110 Ankosee Rupees.

Oil, sugar, ghee, areca nuts, cocoa nuts, indigo, turmeric, and many other articles, are sold by weight; but there are measures formed for them, which assimilate with the Seer of 80 Rupees.

The Seer of saffron, silk, gold thread, and cochineal, equals 72 Tolas, goldsmiths' weight = 13550 gr. Troy, or 1 lb. 12 oz. 11 dr. Avoirdupois weight.

LONG MEASURE.

			Eng. Inches.
14 Tussoos	} make	1 Hath..	= 14
1½ Hath ..		1 Guz ..	= 24½

AMBOYNA.

(One of the Molucca or Spice Islands.)

Lat. 3° 40' S.—Lon. 128° 15' E.

MONIES.—The following are the rates at which different foreign coins are current :—

New Ducatoon..	80 Stivers.	Rix Dollar	48 Stivers.
Old Ducatoon ..	78 “	Rupee	30 “
Spanish Dollar..	64 “	Star Pagoda	99 “
German Crown..	60 “	Gold Mohur	480 “

Accounts are kept in Rix Dollars, Schillings, and Stivers. The Rix Dollar may be valued at 3s. 4d. sterling, and its divisions in proportion, which are the following:—

4 Doits....	} make	1 Stiver
4 Stivers ..		1 Dubbeltjee
6 Stivers .		1 Schilling
8 Schillings		1 Rix Dollar.

WEIGHTS.—Dutch, Chinese, and English weights are in common use here.*

Gold and silver are weighed by the Catty, equivalent to 12288 Dutch Asen, or to 18 oz. 19 dwts. 14 gr. Troy. The Catty is divided as follows:—

4 Copangs	} make	1 Mace =	gr. 28.46
16 Mace ..		1 Tale. =	455.35
20 Tales ..		1 Catty =	1 lb. 6 oz. 19 dwt. 14 gr.

Diamonds are weighed by the Carat of 4 Grains, 2500 of which Carats make 1 lb. Dutch Troy weight. Hence 1 Carat is equal to 3.038 English Grains.

The Bahar of cloves weighs 550 lb. Dutch Troy, or $596\frac{3}{4}$ lb. Avoirdupois. A Coyang of rice contains 25 Peculs, 2500 Catties, or 3000 lb. Dutch Troy; equal to $3255\frac{1}{2}$ lb. Avoirdupois.

MEASURES.—The Kanne, a liquid measure, of 91 English Cubic Inches, or $3\frac{5}{3}$ Pints, and the Covid, a long measure, of $18\frac{2}{5}$ English Inches, are used throughout the Molucca Islands.

* As Dutch weight is in very general use here, as well as in many other Oriental Settlements, its proportion to the English standard should be stated, and is as follows:—

1 Dutch Troy	Pound =	7596 Gr. English Troy	} (See CAMBIST, vol. 1. p. 9.)
1 Dutch Commercial Pound	=	7625 “ “ “	

AMOD, OR AHMOODE.

(A Town and District in the Province of Gujrat.)

Lat. 25° 39' N.—Lon. 77° 53' E.

The MONIES of Amod are the same as those of Broach, which see.

COMMERCIAL WEIGHTS.

		lb.	oz.	dr.
40 Broach Rupees	} make	1 Market Seer ..	=	1 0 3½
40 Seers		1 Maund	=	40 8 12
20 Maunds		1 Candy	=	810 15 0

FOR DRY GOODS, KUPPAS, AND GRAIN.

		lb.	oz.	dr.
41 Broach Rupees	} make	1 Pergunnah Seer =	1 0 10	
40 Seers		1 Maund	=	41 9 5
20 Maunds		1 Candy	=	831 10 4

FOR COTTON.

		lb.	oz.	dr.
41 Broach Rupees	} make	1 Seer	=	1 0 10
42 Seers		1 Maund	=	43 10 10
20 Maunds		1 Candy	=	873 4 13

LONG MEASURE.—The Guz = $27\frac{1}{8}$ English Inches.

ANJAR.

(In the Province of Bhooj.)

Lat. 23° 4' N.—Lon. 70° 18' E.

For the MONIES of this District see *Assay Report*, Nos. 77 and 78, p. 21.

GOLD AND SILVER WEIGHT.

		gr.
1 Vall	=	5.6
16 Valls make 1 Guddiana	=	89.5

COMMERCIAL WEIGHT.

1 Dokra = 127.5 gr.

		lb.	oz.	dr.
36 Dokra	} make	1 Seer	=	0 10 7½
10 Seers.		1 Dus Serrah	=	6 8 14
40 Seers.		1 Maund ..	=	27 3 8

Cotton and iron are sold wholesale by the Maund of 48 Seers, which equals 31 lb. 7 oz. 9 dr.

DRY MEASURE.

			Cubic Inches.
		1 Pallee =	59.3
8 Pallees	} make	1 Mapp. =	474.4
4 Mapps		1 Shye . =	1897.6
16 Shyes .		1 Culsey =	30361.6*

LONG MEASURE.—The Guz of 34 Country Inches contains 26.4 English Inches.

ANJENGO.

(On the Coast of Travancore.)

Lat. 8° 39' N.—Lon. 76° 51' E.

Accounts are kept in Fanams, Pice, and Budgerooks.

4 Budgerooks ..	} make	1 Pice
12 Pice, or 16 Vis		1 Fanam
6 Fanams		1 Rupee.

The Fanam is worth about $\frac{1}{5}$ of the new Madras, or Bombay Rupee, and the inferior pieces in proportion: it is generally valued at $4\frac{1}{4}d.$ sterling.

Gold and silver are sometimes weighed by English Troy, but the standing weight for ingots and bars is the St. Thomas's Weight, answering to 2 dwt. $5\frac{1}{4}$ gr. Troy.

COMMERCIAL WEIGHT.

8 Pollams	} make	1 Telong =	lb. 16
35 Telongs		1 Candy. =	560

ALSO

28 lb. Avoirdupois	} make	1 Maund =	28
20 Maunds		1 Candy. =	560

* The contents of such Measures of Capacity as are here given in Cubic Inches may be determined in English Gallons, by dividing, by 231 for Wine Measure, by 268.8 for Winchester Measure, or by 277.274 for Imperial Measure. Thus 30361.6, the Cubic Inches of the Culsey, will be found to equal 131.43 Wine Gallons, 112.9 Corn Gallons, or 109.5 Imperial Gallons.

ARABIA. *See ITS CHIEF CITIES.*

ARCOT.

(*The Capital of a District of the same Name in the Carnatic.*)

Lat. 12° 52' N.—Lon. 79° 29' E.

The MONIES of this district are chiefly those of Madras, with Arcot Rupees; for the sterling value of which see pp. 26, 27, &c.

COMMERCIAL WEIGHT.—The Pucka Seer* used in weighing common goods, as jaggery, sugar, tamarinds, oil, &c. is divided into halves, quarters, &c. and also into 24 Pollams, and answers to 1 lb. 13 oz. Avoirdupois, with its divisions in proportion. Hence 1 Pollam equals 531 Troy Grains nearly.

DRY MEASURE.—The measure used for grain of every description is the Puddy, which is divided into halves, quarters, &c. and contains $1\frac{7}{8}$ English Quart.

The Puddy of grain, streaked, weighs 42 Pollams, or 3 lb. 2 oz. 12 dr.; but when heaped, as is the general practice, it weighs 47 Pollams, or 3 lb. 8 oz. 12 dr.

LONG MEASURE.—The long measure is the Cubit, which equals 18 English Inches. The English Yard is also used in selling English cloths, especially to Europeans.

The above Weights and Measures are also in use at Allepay, Arnee, Chittoor, Vellore, and Wallajahbad, in the Carnatic.

AUMMODH.

(*In the District of Calpee.*)

The following is the only difference from the weights of CALPEE.

	lb.	oz.	dr.
The Seer for cotton	= 1	8	
The Seer for grain and all other goods	= 2	0	8

For further particulars see CALPEE.

* The Seers throughout India are of two general descriptions—namely, the *Pucka*, and *Cutchá Seer*. The former is always the larger of the two, but their proportions to each other vary in different places.

AURUNGABUNDER.

(A Town and Province in Sinde.)

Lat. 27° 30' N.—Lon. 68° 10' E.

Accounts are kept in Rupees, Carivals, and Pice, 12 Pice making 1 Carival, and 5 Carivals 1 Rupee.

Couries circulate here at about 50 per Pice.

GOLD AND SILVER WEIGHT.

24 Moons	}	make	{	1 Ruttee =	dr. 0.67
6 Ruttees				1 Massa. =	15.58
12 Massas				1 Tola . =	187.5

COMMERCIAL WEIGHT.

4 Pice	}	make	{	1 Anna	lb. oz. dr. 0 1 13.8
16 Annas				1 Pucka Seer =	1 13 13
40 Pucka Seers				1 Maund =	74 10 10

GRAIN MEASURE.

4 Puttocs	}	make	{	1 Tivier
4 Tiviers				1 Cossa
60 Cossas				1 Carival.

These Measures vary according to the kind of grain that is weighed.

LONG MEASURE.

		Eng. Inches.
1 Garce	=	2
16 Garce make 1 Guz .	=	32

AVA. See RANGOON.

BAGULCOTA.

(A District in the Dooab.)

Lat. 34° 17' N.—Lon. 69° E.

For the MONIES of this place see *Assay Report*, No. 55.

COMMERCIAL WEIGHTS.—The Cutcha Seer is used for groceries, oils, &c. It weighs 20 Madras Rupees, and therefore equals 8 oz. 3½ dr.

Grain is sold by the Pucka Seer, which weighs 133 Madras Rupees, and equals 3 lb. 6 oz. $11\frac{1}{2}$ dr. It measures $116\frac{1}{2}$ Cubic Inches.

LONG MEASURE.—24 Tussoos make 1 Guz = $32\frac{7}{8}$ English Inches.

The Hath, for measuring cloths and turbans, answers to $19\frac{1}{4}$ English Inches.

BAIRSEEAH.

(*A Town and District in Central India.*)

Lat. $22^{\circ} 30'$ N.—Lon. 77° E. nearly.

WEIGHTS.

		lb.	oz.	dr.
80 Bhopal Rupees	} make	1 Seer....	=	1 14 13
5 Seers		1 Pusseree	=	9 10 $3\frac{1}{2}$
8 Pusserees		1 Maund .	=	77 1 12
4 Maunds		1 Maunee.	=	308 7 0
100 Maunees.....		1 Maniasa.	=	30843 12 0

For further particulars see MALWA.

BANDA.

(*One of the Molucca or Spice Islands.*)

Lat. $4^{\circ} 30'$ S.—Lon. 130° E.

Accounts are kept in Rix Dollars, Schillings, and Stivers.

16 Pennings.	} make	1 Stiver
6 Stivers ..		1 Schilling
8 Schillings		1 Rix Dollar.

Spanish Dollars are current here, and are exchanged into Rix Dollars, at 125 Rix per 100 Spanish. The Rix Dollar may be valued at 3s. 4d.

WEIGHTS.—The Catty weighs $5\frac{1}{2}$ lb. Dutch, or $6\frac{1}{16}$ lb. Avoirdupois. The Bahar is 100 Catties, or 610 lb. Avoirdupois. Nutmegs are sold by Dutch Troy weight.

A Soekel of nutmeg blossoms is 28 Catties, or $170\frac{1}{2}$ lb. Avoirdupois.

BANGALORE.

(A Town and Territory in the Mysore.)

Lat. 12° 57' N.—Lon. 77° 46' E.

WEIGHTS FOR JEWELLERY, GOLD, & SILVER.—

The weight of 16 small Grains of paddy, or 4 Groometries (beans), is reckoned to compose the Gold Canteroy, or Sultana Fanam, which equals 5.87 Grains Troy.

9 Sultany Fanams.	}	make	{ 1 Bahadry or Star Pagoda	}	=	52.8	gr.
10 Bahadry Pagodas			{ 1 Adpowe or 3 Rupees weight, at 30 Gold Fanams per Rupee				
80 Bahadry Pagodas			{ 1 Cutcha Seer, or 24 Rupees weight				
						4227 or 9 10½	oz. dr.

WEIGHTS FOR GROCERY, &c.

3 Rajah Rupees weight ..	}	make	{ 1 Polum or Adpowe ..	}	=	527	gr.
2 Adpows			{ 1 Powe				
4 Powes or 24 Rupees ..			{ 1 Cutcha Seer				
5 Seers			{ 1 Punj Seer or Vis ..			0 10 0	lb. oz. dr.
2 Punj Seers			{ 1 Duddah			2 8 0	
4 Duddahs			{ 1 Maund			12 8 0	
20 Maunds or 480 Rattles, } at 40 Rupees weight each }			{ 1 Candy			25 0 0	
						500 0 0	

The Maund of 40 Seers is used in all revenue transactions and Circar accounts. The merchants, in their retail dealings, weigh by the Punj Seer or Vis, or, at the rate of 42 Seers to the Maund.

GRAIN MEASURE.

30 Gold Canteroy or } Sultany Fanams wt. }	}	make	{ 1 Rajah Pondicherry or Arcot } Rupce	}	=	176.4	gr.
5¼ Rupees			{ 1 Chattack				
4 Chattacks			{ 1 Powe				
4 Powes or 3½ Cut- cha Seers or 84 Rupees weight of 9 sorts of grain.. }			{ 1 Pucka Seer			0 2 1½	lb. oz. dr.
2 Pucka Seers						0 8 6½	
4 Bullahs						2 1 10¼	
20 Colagahs or 160 Pucka Seers..... }			{ 1 Kistuaraz Bullah			4 3 5½	
1½ Colagah or 12 Seers			{ 1 Do. Colagah or Coodom ..			16 13 6¾	
			{ 1 Do. Candagon or Candy ..			336 12 4½	
400 Mercals or 30 Kis- tuaraz Candies }			{ 1 Company's Mercall }			25 4 2	
			{ 1 Garce			90 0 23	cwt. qr. lb.

The Kistuaraz, Colagah, and Candy, have been used in the Circar accounts of the Mysore Territory ever since the capture of Seringapatam. Merchants, however, measure by Mercalls of 9, 10, 12, 16, 64, or 96 Pucka Seers, as may be agreed upon, in wholesale dealings.

LONG MEASURE.

			Inches.
3 Jows or Grains of Rice	} make	1 Angle	$2\frac{11}{96}$
3 Angles		1 Gerah	$6\frac{11}{30}$
8 Gerahs		1 Haut or Cubit	$19\frac{1}{16}$
2 Hauts		1 Guz	$38\frac{2}{16}$

This Guz is established by the Mysore Government for the measurement of land.

For MONIES see MYSORE.

BANJAR MASSIN.

(*In the Island of Borneo.*)

Lat. 3° S.—Lon. 114° 55' E.

COINS.—Spanish Dollars are the chief currency here, with a few Coins from Batavia, and Chinese Cash for small change. The following Coins likewise circulate:—

Pillar Dollars, which, if full weight, pass for the same as Spanish.

French Crowns; there is a loss on these, if taken to China.

Rupees of various kinds, liable to the same loss.

Ducatoons, which pass at the rate of 125 Spanish Dollars for 100

Ducatoons.

WEIGHTS.—Those in common use for gross articles are the Pecul and Catty; the small weights are Teeas, Mace, and Malaboorongs:—

3 Malaboorongs	} make	1 Teea..	$=$	^{gr.} 6.4
6 Teeas		1 Mace .	$=$	38.4
16 Mace.....		1 Tale..	$=$	614.4

MEASURES.—Grain is measured by the Ganton, 230 of which are a Last of Rice, weighing $3066\frac{2}{3}$ lb. Avoirdupois.

BANSWARRA. See MALWA.

BANTAM.*(On the Island of Java.)*Lat. $6^{\circ} 4'$ S.—Lon. $106^{\circ} 3'$ E.

The current Coins are Spanish Dollars, Ducatoons, Rupees, Schillings, Dubbeltjees, Doits, and Cash; the King having no Coin of his own. The Cash vary in their value. Accounts are kept decimally, thus:—

10 Peccoes	}	make	{	1 Laxsan
10 Laxsans				1 Catty
10 Catties				1 Uta
10 Utas ..				1 Bahar.

The Peccoe should contain 1000 Cash, but is frequently deficient. Its price varies from 25 to 35 per Spanish Dollar.

WEIGHTS.—The weight for gold, musk, &c. is the Tale, equal to 1055 English Grains.

Of the great weights 100 Catties make a Pecul, and 3 Peculs 1 Bahar, which weighs 396 lb. Avoirdupois; but the Bahar of pepper is 200 Kulacks, or Goelacks, and weighs 375 lb. Dutch Troy, or 407 lb. Avoirdupois. A Coyang of rice is 200 Gantams. The Gantam is 8 Bamboos, or 32 Catties. The Coyang weighs 8000 lb. Dutch Troy, or 8681 lb. Avoirdupois.

The Pecul at Cheribon weighs 125 lb. Dutch Troy, or 135 lb. 10 oz. Avoirdupois; and the Tiayang of rice is 2000 Catties, or 2640 lb. Avoirdupois.

MEASURES.—The long measure is the Hasta, which is 18 English Inches.

For further information see **BATAVIA.**

BARDOLER.*(A District of Surat.)*Lat. $23^{\circ} 11'$ N.—Lon. $73^{\circ} 21'$ E.

COMMERCIAL WEIGHT.—The Maund of Bardoler contains $39\frac{3}{4}$ Seers, and 2 Pice of Surat = 37 lb. 4 oz. $4\frac{3}{4}$ dr.

For further particulars see **SURAT.**

BARODA.

(A Pergunnah in the District of Broach.)

Lat. 25° 31' N.—Lon. 76° 49' E.

For the MONIES see *Assay Report*, No. 67 to 72.

COMMERCIAL WEIGHT.

PERGUNNAH SEER.

		lb.	oz.	dr.
42 Babashey Rupees*	} make	1 Pergunnah Seer =	1	0 15.8
42 Seers		1 Maund..... =	44	9 10
20 Maunds		1 Candy	892	1 4

TOWN SEER.

41 Babashey Rupees	} make	1 Town Seer =	1	0 9.5
42 Seers		1 Maund..... =	43	8 10
20 Maunds		1 Candy	870	13 7

SEER FOR SEA SAMUM.

42 Babashey Rupees	} make	1 Seer	1	0 15.8
40 Seers		1 Maund..... =	42	7 10.8
20 Maunds		1 Candy	849	9 9

The Seer for oil is the Pergunnah weight, as above.

LONG MEASURE.—24 Tussoos make 1 Guz = $27\frac{1}{8}$ English Inches.

BATAVIA.

(On the Island of Java.)

Lat. 6° 10' S.—Lon. 106° 51' E.

A new monetary system has been of late established in Java by the King of the Netherlands.

Accounts were however previously kept in Rix Dollars, an imaginary money, containing 48 Stivers, and valued at 5s. sterling. But the currency consisted of the following Coins:—Rupees of 4 Schillings, 12 Dubbeltjees, 15 Cash, 30 Stivers, or 120 Doits. The Rupee was valued at 3s. $1\frac{1}{2}d.$, and the Stiver at $1\frac{1}{4}d.$

* It may be worthy of remark that, notwithstanding the diversity of weights throughout India, there is a similarity in their divisions and principles. Thus in most systems of commercial weight the elementary standards are Rupees, which are multiplied into Seers, and Seers into Maunds, &c. as above. Again in smaller weights the Rupee is sub-divided into very numerous and minute parts, perhaps beyond any example in European Metrology.

In the new system, the monetary unit is the new Gulden or Florin of the Netherlands; and, instead of decimal divisions, it is divided as follows:—

4 Doits	} make	1 Indian Stiver
5 Doits		1 Dutch Stiver
2 Dutch Stivers		1 Dubbel
3 Dubbels		1 Schilling
4 Schillings ..		1 Gulden or Florin.*

A paper currency has been also established, consisting of Billets of 1000, 600, 300, 100, 50, 25, 10, 5, and 1 Guldens, which are convertible into specie on demand. For this purpose, Exchange Offices are erected at Batavia, Samarang, and Sourabaya; the two latter issue no paper of greater value than 100 Guldens.

The principal Coins of the Island are Patacks and Cash. The Patack is equal to 6 Mace, or 24 Cash. There are also pieces called Pities, composed of 4 parts lead and 1 part tin, 50 of which make 1 Stiver.

The rates at which foreign Coins pass here are subject to variation; they are mostly valued, both silver and gold, according to weight and fineness. The following Coins are current, and are received in the Government Treasury at the rates of exchange here specified:—

	Doits		Doits
Rupee of Java, Surat, and		Old Ducatoon.....at	312
Arcot.....at	120	Milled Ducatoon.....	320
Sicca Rupee.....	126	Gold Ducat of the Nether-	
American Dollar.....	240	lands	528
Spanish Dollar	264	Gold Rupee.....	1920

WEIGHTS.—Gold and silver are weighed by the Dutch Mark Troy, divided into 9 Reals, each weighing 422 Grains English. (See Note, p. 32.)

The Dutch Troy Pound of 2 Marks is used generally in foreign trade, but the Chinese weights are those in common use, *viz.*—

16 Tales .	} make	1 Catty =	1½ lb. Dutch Troy.
100 Catties		1 Pecul =	125 lb. Ditto, or 135 lb. 10 oz. Avoir.
3 Peculs		1 small Bahar.....	= 406 14
4½ Peculs		1 large Bahar.....	= 610 5

* The old Florin of Batavia may be valued at 19¼ Pence sterling, and the new Florin of the Netherlands at 20½ Pence sterling.

MEASURES.—Rice and other grain are sold by the Coyang, which should weigh 3300 lb. Dutch Troy, or 3581 lb. Avoirdupois; but in small quantities by the Timbang of 5 Peculs, or 10 Sacks. There is also the Kulack of $7\frac{1}{4}$ Catties, and the Last of 46 Measures, each containing 5 Gantons.

The liquid measure generally used is the Kanne, containing 91 English Cubic Inches: thus 33 Kannes are equal to 13 English Gallons. A Leager of wine is reckoned 360 Rands, each Rand 10 Mursies; and a Leager of arrack, 396 Rands.

A Vorn of firewood is 225 Feet long, and 4 Feet square. The Ell of stone is 10 Inches long, 5 broad, and $2\frac{1}{2}$ thick.

Of long measure, the Ell is $27\frac{3}{4}$ English Inches; and the Foot, 12 Thumbs or Inches Dutch or Rhineland measure, equivalent to $12\frac{9}{15}$ English Inches.

BAULEAH.

(*A Factory in Bengal.*)

Lat. $24^{\circ} 15'$ N.—Lon. $87^{\circ} 10'$ E.

COMMERCIAL WEIGHT.

1 Chattack = $670\frac{3}{4}$ gr.
16 Chattacks make 1 Seer .. = 1 lb. 8 oz. 10 dr.

Besides the above Seer of 60 Sicca Rupees weight, there is a Seer of 80 Sicca Rupees weight, which equals 2 lb. 0 oz. 11 dr.

The Sicca Rupee weight of Bengal is reckoned at $179\frac{2}{3}$ English Grains, but it varies two or three Grains, more or less. The contents here given are those of the actual weights transmitted.

MEASURE OF CAPACITY FOR LIQUIDS.—The Seer of 60 Sicca weight equals 1 lb. 8 oz. 10 dr.

The Cubit is 18 English Inches.

BEEMMAR. See CALPEE.

BELGAM. See DOOAB.

BELGAUM.

(In the Southern Mahratta Country.)

Lat. 18° 42' N.—Lon. 83° 27' E.

The weights and measures principally used at Belgaum and Shapere are the following:—

WEIGHTS.

				1 Shapere Rupee =	174 ^{gr.}
24 Rupees weight	} make	1 Seer	=	0	9 8 ^{lb. oz. dr.}
11 Seers		1 Dhuddie	=	6	8 15
4 Dhuddies		1 Maund	=	26	3 15
20 Maunds		1 Candy	=	524	14 12

MEASURES.

8 Kalary	} make	1 Paw or Seer ..	=	1 ⁵ / ₁₆	Quarta.
2 Pawaas or Quarters		1 Adholy or Half	=	2 ¹⁰ / ₁₆	
2 Adholies		1 Payebbee	=	5 ¹ / ₄	
24 Payebbees		1 Koora	=	31 ¹ / ₂	Gal.
20 Kooras		1 Candy	=	630	

BELLARY.

(A Town and Province in the Ceded Districts.)

Lat. 23° 10' N.—Lon. 79° 30' E.

GOLD AND SILVER WEIGHT.—Gold and silver are bought and sold by the Mysore Rajah's new, or Company's old or Pondicherry Rupee, weighing 176¹/₄ Grains Troy, and denominated Thollam, the divisions of which are as follow:—

3 Goondoominies (vegetable beads)	} make	1 Canteroy Fanam	=	5.875	gr.
2 ¹ / ₂ Canteroy Fanams		1 Mass	=	14.687	
9 Ditto Ditto		1 Bahadry Pagoda	=	52.875	
30 Ditto Ditto		1 Thollam	=	176.25	
24 Thollams or Rupees		1 Seer	=	4230 or 9 oz. 10 dr.	

This Table of weights is applicable to the whole of that range.

COMMERCIAL WEIGHT.—Gross goods, such as sugar, tama-

rinds, meat, oil, ghee, &c. are sold by the undermentioned weights, regulated by the Mysore Rupee.

		lb.	oz.	dr.
21 Rupees	1 Mysore Rupee or Thollam =	0	0	6.445
6 Seers	1 Seer	0	8	7.34
2 Puncha Seers	1 Puncha Seer	3	2	12
4 Dhadiums....	1 Dhadium	6	5	8
	1 Maund	25	6	0

Thus the Bellary Maund is 6 oz. more than the Madras Maund, reckoning the Mysore Rupee as above; but reckoning the same Rupee at 176.16 Grains, according to *Noton's* Table, p. 22, No. 97, the excess of the Bellary Maund would be 5 oz. only.

COTTON WEIGHT.—Cotton is weighed by the Maund and Miggah; the Dhadium or Quarter Maund being equal to 256 Company's Rupees, new coinage, denominated by the natives Gaaders or Bandy Rupees.

Computing this at 180 Grains, the following is the cotton weight:—

		lb.	oz.	dr.
256 Rupees ..	1 Dhadium =	6	9	5
4 Dhadiums }	1 Maund . =	26	5	4
12 Maunds.. }	1 Nuggah. =	315	15	0

GRAIN MEASURE.—The following is the ancient grain measure of the country, still used in the districts, and regulated by a measure called Thealee or Thimmapoo, containing 112 Madras Rupees weight of nine sorts of grain, known by the name of the Nuoadanium measurement.*

		lb.	oz.
112 Rupees	1 Thimmapoo =	2	14
3 Thimmapoos or 4 Giduah	1 Sollagay .. =	8	10
4 Sollagays	1 Maanah .. =	34	8
4 Maanahs	1 Pullah =	138	0
4 Pullahs	1 Collagah .. =	552	0
5 Collagahs	1 Punchagah. =	24	2 16
4 Punchagahs	1 Contagah . =	98	2 8

The Giduah is thus equal to the Bellary Pucka Seer of 84 Rupees, which is the measure now generally used for grain of all kinds, and which equals 2 lb. 1 oz. 14 dr.

* These nine sorts of grain are,—Rice, Wheat, Coolty, Pasaloo, Mernoo-mooloo, Oil Seeds, Bengal Grain, Aunoomooloo, and Nooloo.

Chunam is measured by the Mercal, containing 12 Pucka Seers of 84 Rupees weight, grain measurement, and 5 Mercals make the Parrah.

LONG MEASURE.—Cloths, carpets, &c. are measured as follows:—

12 Inches	} make	1 Foot
1½ Foot		1 Cubit
2 Cubits		1 Yard or Guz = 36 English Inches.

BENARES.

(*A City and District in the Province of Alluhabad.*)

Lat. 25° 30' N.—Lon. 83° 2' E.

For the Rupee of Benares see p. 14.

The following are the contents of the standards transmitted from this city to London, viz.—

	lb.	oz.	dr.
The Seer of 105 Sicca weight	=	2 10	0
Ditto 103	=	2 9	2
Ditto 96	=	2 6	7

The Tola weighs 215 Grains Troy.

LONG MEASURE.

	Eng. Inches.
The Tailor's Yard	= 33
The Weaver's Ditto	= 42½
The Cloth Merchant's Ditto	= 37½
The Architect's Ditto	= 25½

BENCOOLEN. See FORT MARLBOROUGH.

BENDER ABASSI. See GAMRON.

BENGAL. See CALCUTTA.

BETELFAKEE.

(*In Arabia, on the Red Sea.*)

Lat. 14° 30' N.—Lon. 61° 10' E.

Accounts are kept here in Piastres or Mocha Dollars of 80 Carats or Cavears; and also in Spanish Dollars, consisting of 40 Cavears. The Cavear is an imaginary money.

WEIGHTS.

15 Vakias.	} make	1 Rattle			
2 Rattles		1 Maund		lb.	oz. dr.
10 Maunds		1 Frazil, or Farcel	=	20	6 4
40 Frazils		1 Bahar	 =	815	10 0

Of coffee $14\frac{1}{2}$ Vakias make a Rattle ; of dates, jaggery, candles, and iron, 16 Vakias make a Rattle. The latter weight is only used in the Bazar. 7 Frazils in Mocha are equivalent to 10 Frazils in Betelfakee. A Bale of coffee is 14 Frazils, and the allowance for tare 8 Maunds.

A Tommond of rice contains 40 Kellas, and weighs 168 lb. Avoirdupois.

Cotton is sold per Harraff, an imaginary money, 9 of which are equal to $11\frac{1}{2}$ Mocha Dollars, or Piastres of account.

The weights at this place are annually rectified by the Imaum's shroff.

MEASURES.

LIQUID MEASURE.
 16 Vakias . } make { 1 Noosfia
 8 Noosfias } { 1 Caddy.
 The Caddy, or Gudda, contains
 about 2 Gallons.

CLOTH MEASURE.
 The Covid is 18 Inches, English
 The Guz is 25 Ditto
 The long Iron Covid is 27 Ditto.

BHEDECK. See CALPEE.

BHEDH. See CALPEE.

BHILSA. See MALWA.

BHOOTSUR. See SURAT.

BHOPAL. See MALWA.

BIRMAN EMPIRE. See RANGOON.

BOHARE. See SURAT.

BOMBAY.

Lat. 18° 56' N.—Lon. 72° 58' E.

For the MONIES of this Presidency see p. 17, &c.

GOLD AND SILVER WEIGHT.

6 Chowe	} make	1 Goonze	=	1.79
2½ Goonze		1 Vall ..	=	4.75
40 Valls..		1 Tola ..	=	179

PEARL WEIGHT.

		1 Tuka .	=	0.2182
13¼ Tukas .	} make	1 Ruttee	=	3
24 Ruttees		1 Tank .	=	72

The Ruttee is sometimes divided into 4 Quarters and 16 Annas.

For further particulars respecting the weight and valuation of pearls, diamonds, &c. see MADRAS.

COMMERCIAL WEIGHT.

30 Pice or 72 Tanks	} make	1 Seer..	=	0 11 3½*
40 Seers		1 Maund	=	28 0 0
20 Maunds.....		1 Candy	=	560 0 0

By the above weight all heavy or gross goods, except grain, batty, and salt are weighed.

GRAIN MEASURE.

2 Tippires	} make	1 Seer	=	0 11 3.2
4 Seers ..		1 Paily or Adowly	=	2 12 12.8
16 Pailies .		1 Parah	=	44 12 12.8
8 Parahs .		1 Candy	=	358 6 4

17 Adowlies are sometimes allowed, in wholesale dealing, to 1 Parah.

BATTY MEASURE.

2 Tippires	} make	1 Seer	
7½ Seers		1 Adowley	
20 Adowlies		1 Parah	
6¼ Parahs		1 Candy	
4 Candies or 25 Parahs		1 Moorah.	

A bag of rice is computed to weigh 168 lb. Avoirdupois, or 6 Maunds, and a Candy to contain 25 Winchester Bushels; but in all computations respecting corn, rice, &c. there is much uncertainty in measure, as well as variety of weight, according to the nature of the grain.

* This Seer, in retail business, is mostly computed at 11 oz. 4 dr., and it is divided into halves, quarters, eighths, &c. which are reckoned in Tanks.

SALT MEASURE.

			Cubic Inches.	Winchester M.
10½ Adowlies	} make	1 Parah	= 1607.61	= 6 Gallons
100 Parahs ..		1 Anna	= 160761	= 75 Bushels
16 Annas ..		1 Rash	= 2572176	= 12 Quarters

The Anna is computed to weigh 2½ Tons, and the Rash 40 Tons.

LIQUID MEASURE.

(SPIRITS, AND COUNTRY ARRACK.)

The Seer weighs 60 Bombay Rupees, and equals 1 lb. 8 oz. 8¼ dr.; and 50 Seers make the Maund, or 76 lb. 11 oz. 7 dr.

LONG MEASURE.

			Eng. Inches.
16 Tussoos	} make	1 Hath	= 18
24 Tussoos		1 Guz	= 27

All the foregoing standards are likewise divided into halves, quarters, &c.

* * The Dispatch, containing the above statements, concludes with the following remarks:—

“The preceding weights and measures are generally used in Bombay; but it occurs in mercantile transactions, that calculations are sometimes made in Bengal Maunds, and Surat Maunds, which two weights are sometimes reckoned at 40, 40½, 41, 43¼, and 44 Seers; and sometimes in Surat Candies of 20, 21, and 22 Maunds.”

“Such is the variety that, in dealing, it is customary to stipulate on the kind of weight or measure that must be used.”

BORNEO. See BANJAR MASSIN and SUCCADANA.

BOURBON (ISLE OF). See MAURITIUS.

BROACH.

(A Town and District in the Province of Gujrat.)

Lat. 21° 41' N.—Lon. 73° 6' E.

For the MONIES, &c. see *Assay Report*, Nos. 64 and 65.

COMMERCIAL WEIGHTS.

			lb.	oz.	dr.
40 Broach Rupees Weight	} make	1 Kuppas Town Seer	=	1	0 3
40 Seers		1 Maund	=	40	8 12
20 Maunds		1 Candy	=	810	15 0

The following standards are used by Mupparahs, or Grain Weighers.

			lb.	oz.	dr.
40 Broach Rupees Weight	} make	1 Seer ..	=	1	0 5½
40 Seers		1 Maund	=	41	1 4
20 Maunds		1 Candy	=	821	9 0

Market and Pergunnah Seer for all sorts of grain, except sea samum, which is sold by the Kuppas Town Seer first mentioned.

			lb.	oz.	dr.
41 Broach Rupees Weight	} make	1 Seer ..	=	1	0 10
40 Seers		1 Maund	=	41	9 5
20 Maunds		1 Candy	=	831	10 14

Market and Pergunnah Seer used for weighing cotton only.

			lb.	oz.	dr.
40 Broach Rupees Weight	} make	1 Seer ..	=	4	0 3½
42 Seers		1 Maund	=	43	9 9½
20 Maunds		1 Candy	=	873	0 0

MEASURES OF CAPACITY.—The Seer for oil and sea samum contains 31.87 Cubic Inches, or 0.138 of a Wine Gallon; and is the same as that used at Amod, Dehy, and Jumboosur.

FOR CASTOR OIL.

			lb.	oz.	dr.
40 Broach Rupees Weight	} make	1 Seer ..	=	1	0 3½
42 Seers		1 Maund	=	42	9 9½
20 Maunds		1 Candy	=	852	0 0

This Seer measures 33.03 Cubic Inches, or 0.143 of a Wine Gallon.

LONG MEASURE.—24 Tussoos make 1 Broach Zillah Guz = 27¼ English Inches.

Another standard of Long Measure has been received from this district, called the Wusa, which contains 89.6 English Inches, and which is very extensively used in India in the measurement of land.

			Eng. Inches.
		1 Wiswusa	= 4.48
20 Square Wusas	} make	1 Wusa ..	= 89.6
20 Wiswusas		1 Beega ..	= 2 Roods 29 Perches.

BUGWANA. *See* SURAT.

BULSAR. *See* SURAT.

BURGONG. *See* CALPEE.

BUSHIRE.

(In Persia, on the Persian Gulph.)

Lat. $28^{\circ} 50'$ N.—Lon. $31^{\circ} 5'$ E.

For the MONIES of this trading place see PERSIA and BUSSORAH. Foreign Coins also circulate here, but all at a variable rate.

The following Standards were transmitted from this station to the India Directors in London in 1822, viz.—

The Maund Tabruze, which weighs 7 lb. 10 oz. 15 dr. Avoirdupois. It is divided into Halves, Quarters, Eighths, &c., and also into 720 Miscals.

	Eng. Inches.
The Half Guz Shaw, which measures.....	20
The Half Guz Bushere	18.4

Thus 23 of the former equal 25 of the latter.

BUSSORAH, OR BASSORA.

(A City of Arabia, near the Persian Gulph.)

Lat. $30^{\circ} 20'$ N.—Lon. $46^{\circ} 55'$ E.

Accounts are kept here in Mamoodies, of 10 Danims, or 100 Floose. 100 Mamoodies make the Toman, which may be valued at 15 Sicca Rupees, or about 36 shillings sterling; but the value of all monies, both foreign and domestic, fluctuates here, according to the plenty or scarcity of the precious metals.

GOLD AND SILVER WEIGHTS.

3 Barley Corns.....	} make	1 Mashek =	3 ^{gr.}
16 Masheks.....		1 Dirhem =	48
24 Masheks, or 1½ Dirhem		1 Miscal . =	72
100 Miscals, or 150 Dirhems		1 Cheki.. =	7200

COMMERCIAL WEIGHTS.

There are three different denominations of weight used here for different kinds of merchandise, and even the contents of these vary according to the nature of the goods which are to be weighed.

The three general distinctions are the Atteree, the Sophi, and the Bagdad standards.

Thus the Vakia Atteree is reckoned to weigh 19 oz. Avoirdupois: the Vakia Sophi $3\frac{1}{8}$ times the Atteree, viz. $59\frac{3}{8}$ oz. Avoirdupois: the Oka of Bagdad $2\frac{1}{2}$ times the same, $47\frac{1}{2}$ oz. Avoirdupois.

The Maunds also differ in the number of Vakias or Okas contained in each, according to the customary allowances for different articles.

From the following Specifications and Standards transmitted to the Court of Directors in 1822, it appears that the above complex system has been simplified by European Merchants residing at Bussorah, who reckon—

24 Vakias Atteree	=	28 ^{lb.}	= the Maund Atteree.
24 Vakias Sophi, or Bussorah	=	116	= the Bussorah Maund.

As to the Maund Bagdad, it is estimated at 6 Okas, or Hokahs, of 400 Dirhems each, answering to nearly $16\frac{1}{2}$ lb. Avoirdupois.

The following are the contents of the Long Measures which were received with the above Weights:—

	Feet.	In.
The Aleppo Yard for Silks and Woollens	= 2	2.4
The Hadded Ditto for Cottons and Linens	= 2	10.2
The Bagdad, for all purposes, occasionally	= 2	7.6

Grain and liquids are generally sold here by weight.

CACHAO.

*(Capital of the Kingdom of Tonquin.)*Lat. $21^{\circ} 30'$ N.—Lon. $105^{\circ} 10'$ E.

Accounts are kept here, as in China, in Tales of 10 Mace, 100 Condarines, or 1000 Cash. The Cash are small copper coins of variable value; 600 are sometimes reckoned to 1 Marada, a money in which the value of foreign coins is mostly estimated.

The sale of Dollars and other Silver Coins is considerable. They are generally melted in bars or ingots, weighing 10 Tales each. This Tale answers to 1 oz. 4 dwts. $14\frac{3}{4}$ grs. Troy, which is nearly 11 grains more than the Chinese Tale. In other respects the weights and measures are the same as in China, which see.

CALCUTTA.

*(In Bengal, the chief Presidency of India.)*Lat. $22^{\circ} 30'$ N.—Lon. $88^{\circ} 24'$ E.

Accounts are kept here in Sicca Rupees, Annas, and Pice.

12 Pice	} make {	1 Anna
16 Annas		1 Sicca Rupee
100 Sicca Rupees		116 Current Rupees.

This mode of keeping accounts, which is used in all large concerns, has been already fully explained in page 13, &c.

There are other methods of keeping accounts here, which are called the *Kauchau* and *Paukau* Accounts.

The former is kept by a species of sea shells called Cowries. It is used in the small bazars, and for other petty disbursements, as follows:

KAUCHAU ACCOUNT.

4 Cowries	} make {	1 Gunda
20 Gundas		1 Pun
4 Puns ..		1 Anna
4 Annas..		1 Cahun.

A Cahun is about a quarter of a Rupee, but its value fluctuates according to the plenty or scarcity of Cowries in the market.

In the bazar, a Boree is equal to 5 Gundahs, and a Chock or Sekee to 4 Puns.

Native Merchants and others keep their accounts according to the

PAUKAU ACCOUNT.

4 Quarters	}	make	{	1 Pie or Pun
4 Pice....				1 Anna
16 Annas..				1 Auka or Rupee.

GOLD AND SILVER WEIGHT.

				Gr. Troy.
4 Punkos	}	make	{	1 Dhan = 0 $\frac{539}{960}$
4 Dhans				1 Ruttee = 2 $\frac{59}{240}$
8 Ruttees				1 Massa = 17 $\frac{23}{30}$
10 Massas				1 Sicca = 179 $\frac{2}{3}$
1 $\frac{1}{2}$ Siccas, or 100 Ruttees, or				1 Tola = 224 $\frac{7}{13}$
12 $\frac{1}{2}$ Massas	}	}	{	

COMMERCIAL WEIGHT.

The large Weights for merchandise are distinguished into the Bazar Standard, and the Factory Weight used in the Company's concerns. The former is 10 per cent. heavier than the latter.

BAZAR WEIGHT,

Which has the Sicca Rupee as its elementary standard, viz.

			lb.	oz.	dr.	dec.	
		179 $\frac{2}{3}$ gr. Troy or	0	0	6.57066		Avoir.
5 Siccas ..	}	make	{	1 Chittack =	0	2	0.8533
16 Chittacks				1 Seer .. =	2	0	13.6533
40 Seers....				1 Maund =	82	2	2.1333

FACTORY WEIGHT.

			1 Chittack =	0	1	13.866
16 Chittacks	}	make	{	1 Seer .. =	1	13 13.866
40 Seers . . .				1 Maund =	74	10 10.666

From the above Tables, it appears that 10 Bazar Maunds equal 11 Factory Maunds, and other subdivisions in the same proportion. For as 11 : 10 :: 82 $\frac{2}{3}$: 74 $\frac{2}{3}$. Hence also, as 74 $\frac{2}{3}$: 112 :: 3 : 2; and therefore 3 Factory Maunds equal 2 Cwt. English.

It also follows that 15 Bazar Maunds equal 11 Cwt. as the same number of Factory Weights equal 10 Cwt.*

LIQUID MEASURE.

			lb.	oz.	dr.
5 Sicca Weight	} make	1 Chittack.....	=	0	2 0 $\frac{5}{8}$
4 Chittacks ...		1 Pouah.....	=	0	8 3 $\frac{1}{2}$
4 Ponahs		1 Seer	=	2	0 13 $\frac{1}{2}$
40 Seers		1 Maund	=	82	2 2 $\frac{2}{3}$
5 Seers		1 Pussaree or Measure	=	10	4 4 $\frac{1}{2}$
8 Measures... .		1 Maund	=	as above	

GRAIN MEASURE.

			lb.	oz.	dr.
5 Chittacks ...	} make	1 Koonkee	=	0	9 1 $\frac{1}{12}$
4 Koonkees ...		1 Raik.....	=	2	4 4 $\frac{1}{2}$
4 Raiks		1 Pally	=	9	1 5 $\frac{1}{2}$
20 Pallies.....		1 Soallee.....	=	181	10 10 $\frac{2}{3}$
16 Soallees		1 Khahoon	=	2906	10 10 $\frac{1}{2}$

CLOTH MEASURE.

			Eng. Inches.
3 Jorbes..	} make	1 Angulla	= 0 $\frac{3}{4}$
3 Angullas		1 Ghercah.....	= 2 $\frac{1}{4}$
8 Ghercahs		1 Haut or Cubit ..	= 18
2 Cubits ..		1 Guz or Yard....	= 36

LONG MEASURE.

			Feet.	Inches.
3 Grains	} make	1 Finger.....	=	0 0 $\frac{2}{4}$
4 Fingers		1 Hand	=	0 3
3 Hands		1 Span	=	0 9
2 Spans		1 Arm or Cubit ..	=	1 6
4 Arms..		1 Fathom	=	6 0

1000 Fathoms make 1 Bengal Coss or Mile, which equals 1 English Mile 1 Furlong 3 Poles and 3 $\frac{1}{2}$ Yards.†

* This Factory Maund was established in 1787. It was planned by the Board of Trade at Calcutta, and afterwards confirmed by the Court of Directors in London, who sent out at the same time models of the new Maund and its divisions to the Factories in Bengal.

By this regulation the business of weighing and computing was greatly simplified, as the Maund previously used bore no integral proportion to any English standard.

† The Coss (also called the Cos, Cros, Crosa, and Hardary) is various in different parts of India. It is generally distinguished into the *Standard Cos* and the *Common Cos*. The former is deduced from its proportion to a

LAND MEASURE.

Land is measured by the Square Chittack, which is equal to 45 Square Feet; that is, 5 Cubits by 4.

16 Chittacks	}	make	{	1 Cottah	=	80	Square Yards.
20 Cottahs.				1 Biggah	=	1600	

Hence $30\frac{1}{4}$ Biggahs equal 1 English Acre.

FOR GOODS RECKONED BY TALE.

5 Particulars	}	make	{	1 Gunda
4 Gundas ..				1 Corge.

CALICUT.

(On the Malabar Coast.)

Lat. $11^{\circ} 13' N.$ —Lon. $75^{\circ} 12' E.$

COINS.—The principal Coins in circulation are Tars, Fanams, and Rupees; but accounts are kept in Rupees, Quarters, and Reas, as at Bombay:—

16 Tars, or Vis	}	make	{	1 Fanam
5 Fanams....				1 Rupee
$3\frac{1}{2}$ Rupees....				1 Star Pagoda
$3\frac{1}{4}$ Ditto.....				1 Porto Novo Pagoda
16 Ditto.....				1 Bombay Gold Mohur.

The Spanish Dollar, full weight, is accounted $2\frac{1}{4}$ Rupees, but passes in the Bazar only from 10 Fanams 4 Tars to $10\frac{1}{2}$ Fanams.

The Fanam is a small gold coin, with a considerable alloy, and worth about 6*d.* sterling.

COMMERCIAL WEIGHT.

10 Surat Rupees	}	make	{	1 Pollam	=	0	4	$1\frac{1}{2}$	dr.
2 Pollams				1 Seer ..	=	0	8	2	$\frac{1}{2}$
2 Seers				1 Pound	=	1	0	5	$\frac{1}{2}$
34 Pounds				1 Maund	=	34	11	11	
20 Maunds				1 Candy	=	26 cwt.	0 qr.	3 lb.	

degree of the meridian, and the latter from popular computation. Thus the Standard Cos is in some places 35 to a degree, and in others $37\frac{1}{2}$, 40, and 45; while the Common Cos varies from 1 to $2\frac{1}{2}$ English Miles. See *Asiatic Researches*, vol. 5, by H. T. COLEBROOKE, Esq., late President of the Asiatic Society at Calcutta.

MEASURES.—The Covid is 18 Inches; and the Guz $28\frac{2}{3}$ Inches. Timber is sometimes measured by the Covid, which is thus divided:—12 Borells make 1 Covid, when the timber is sawed, and 24 when unsawed.

For further particulars, see TELLICHERRY.

CALPAR. See SURAT.

CALPEE.

(*A Town and District in the Province of Agra.*)

Lat. $26^{\circ} 10'$ N.—Lon. $79^{\circ} 48'$ E.

For MONIES and MONEY WEIGHTS, see *Calcutta*.

COMMERCIAL WEIGHTS.

16 Chittacks } make { 1 Seer
40 Seers .. } { 1 Maund.

The Seers vary according to the articles to be weighed, viz.—

	lb.	oz.	dr.
The Seer for sugar, metals, and grain	= 2	1	15
„ for ghee.....	= 2	6	3
„ for cotton.....	= 2	6	12
„ for grain, wholesale.....	= 2	7	5

LONG MEASURE.

4 Paveens }	make { 1 Girrah	=	Eng. Inches.
16 Girrahs }	{ 1 Guz ..	=	$2\frac{1}{2}$ 40

CAMBAY.

(*On the Malabar Coast.*)

Lat. $22^{\circ} 5'$ N.—Lon. $72^{\circ} 51'$ E.

COINS.—Gold Mohurs, Rupees, and Pice are the current coins; 48 Pice make 1 Rupee. For smaller change, a species of Almond,

called Baddam, brought from Persia, is used in the same manner as Cowries at Bengal ; the general rate is about 60 per Pice.

Foreign coins are taken by weight ; their price varying according to the demand and supply.

WEIGHTS.—The Cambay weights are the same as those of Surat, subject to a difference in the allowance on goods bought and sold, thus—

At Surat, Metal is 40 Seers to the Maund.

At Cambay 40 Seers $11\frac{1}{2}$ Pice to Ditto,

besides a rebate of $\frac{3}{4}$ per cent. on the whole weight.

MEASURES.—The long measures are the Cubit, of about 18 Inches, and the Guz of 28, or, in the bazar, of $28\frac{1}{2}$ Inches.

CAMBODIA. *See SIAM.*

CANANORE. *See TELLICHERRY.*

CANARA. *See CARWAR.*

CANCAO. *See SIAM.*

CANTON. *See CHINA.*

CAPE TOWN.

(*Cape of Good Hope.*)

Lat. $33^{\circ} 58'$ S.—Lon. $18^{\circ} 35'$ E.

Accounts were formerly kept here in Dutch money, viz. Florins of 20 Stivers and 320 Pennings ; also, Rix Dollars of 8 Schellings 24 Dubbletjees or 48 Stivers ; but since the year 1826, accounts are generally rendered in English money, and the Rix Dollar is valued at 18*d.* Sterling.

In negotiating Bills upon the Treasury of London, the Commissariat grants them at a premium of from 1 to 3 per cent. according to circumstances.

The Weights and Measures both of England and Amsterdam are occasionally used. The following are the Dutch divisions, and their proportions to British Weights, &c. :

$$\begin{aligned} 2 \text{ Loots..} &= 1 \text{ Ounce} \\ 16 \text{ Ounces} &= 1 \text{ Pound.} \end{aligned}$$

The common proportion is that 92 lb. Dutch weight answer to 100 lb. English Avoirdupois; but the more accurate proportion is $91\frac{4}{5}$ lb. Dutch weight.

LIQUID MEASURE.

The Leaguer equals 152 English Wine Gallons, with halves, &c. in proportion.
 The Pipe 110 Ditto, ditto,
 The Aum 38 Ditto, ditto.

The Gallon here is computed to contain $4\frac{1}{2}$ Bottles.

CORN MEASURE.

$$\begin{aligned} 4 \text{ Chepels} &\} \text{ make } \{ 1 \text{ Muid} \\ 10 \text{ Muids} &\} \text{ make } \{ 1 \text{ Load.} \end{aligned}$$

107 Dutch Chepels (Bushels) equal 82 Winchester Bushels.

CLOTH MEASURE.

4 Dutch Ells are estimated at 3 English Yards; but the nearest proportion is 100 English Yards to $132\frac{1}{2}$ Dutch Ells.

These proportions are supposed to be deduced from the Rhineland Foot, which answers to $12\frac{7}{8}$ English Inches nearly.

LAND MEASURE.

$$\begin{aligned} 144 \text{ Square Inches, Rhineland} &\} \\ 144 \text{ Square Feet, Ditto} &\} \text{ make } \{ 1 \text{ Square Foot} \\ 600 \text{ Square Roods, Ditto} &\} \text{ make } \{ 1 \text{ Square Rood} \\ & \{ 1 \text{ Morgen.} \end{aligned}$$

The Morgen is reckoned to equal 2 English Acres, but the true proportion is 49.71 Morgen to 100 English Acres.

CARWAR.

(In North Canara.)

Lat. 14° 49' N.—Lon. 74° 4' E.

Accounts are kept in Pagodas, Fanams, and Budgerooks, and also in Pagodas, Settles or Jettals, and Pice. The latter are imaginary monies.

24 Budgerooks	}	make	{	1 Fanam	=	0	4 $\frac{17}{24}$
36 Fanams ..				1 Pagoda	=	8	1 $\frac{1}{2}$

ALSO,

6 Pice	}	make	{	1 Jettal or Settle	=	0	2 $\frac{1}{32}$
48 Jettals				1 Pagoda	=	8	1 $\frac{1}{2}$

GOLD AND SILVER WEIGHT.

			dwt.	gr.
		1 Massa	=	0 0 $\frac{11}{288}$
12 Massa	}	1 Vol..	=	0 8 $\frac{19}{24}$
24 Vols		1 Seer	=	8 19

COMMERCIAL WEIGHT.

			lb.	oz.	dr.
		1 Seer..	=	0	9 14 $\frac{2}{3}$
42 Seers....	}	1 Maund	=	26	0 0
20 Maunds		1 Candy	=	520	0 0

The Covid, for cloth measure, answers to 18 English Inches.

CELEBES. *See* MACASSAR.

CEYLON. *See* COLUMBO.

CHANADORE.

(In the Collectorship of Ahmednuggur.)

Lat. 24° 10' N.—Lon. 73° 30' E.

COMMERCIAL WEIGHT.

The Seer weighs 74 Ankosee Rupees and 10 Massas, answering to 1 lb. 13 oz. 8 dr. Avoirdupois. (See Page 20, No. 43.)

WEIGHT OF MEASURES OF CAPACITY.

The Seer weighs 95 Ankosee Rupees, and its divisions and multiples are as follow :—

18 Tanks.....	}	make	1 Pao Seer =	lb.	oz.	dr.
4 Pao Seers			1 Seer.... =	0	9	5 $\frac{3}{4}$
2 Seers			1 Adholee =	2	5	7
2 Adholees			1 Pylee .. =	4	10	14
16 Pylees ...			1 Maund =	9	5	12
20 Maunds ..			1 Candy.. =	149	12	0
				2995	0	0

For further particulars, see AHMEDNUGGUR.

CHINA.

Accounts are kept throughout this Empire in Tales, Mace, Candareens, and Cash, which are thus decimally divided :—

10 Cash.....	}	make	1 Candareen
10 Candareens			1 Mace
10 Mace			1 Tale.

These are imaginary monies, except the Cash, which is composed of base metal, not coined but cast, and chiefly used in small payments. It is round, marked on one side, and rather raised at the edges, with a square hole in the middle. These pieces are commonly carried like beads on a string or wire. 1000 Cash, or Petty, are generally computed to equal 1 Tale of pure Silver ; but this proportion varies according to the plenty or scarcity of these Tokens.

Foreign Coins, however, circulate, particularly Spanish Dollars, and for small change they are cut into very exact proportions, but afterwards weighed, for which purpose merchants generally carry scales called Dotchin, resembling English steelyards.

The Tale is variously valued. In the books of the East India Company it is reckoned at 6s. 8d. Sterling, and this is nearly the value of a Tale Weight of pure Silver, but in other trade it is generally valued according to the price paid per ounce for dollar silver in London. The Tables given for this proportional value may be calculated in Pence by the multiplier 1.208.

Thus if the price of the Dollar Silver be 60 Pence per ounce, the value of the Tale will be $60 \times 1.208 = 72.48$ Pence.

EXCHANGES.

In exchanges with London the Tale is mostly valued by merchants at $66\frac{2}{3}$ Pence, that is 360 Tales for £100 Sterling, and the Spanish Dollar at 4s. Sterling. This valuation, however, is variable.

FINENESS OF GOLD AND SILVER.

The fineness of the precious metals is expressed by dividing the whole weight into 100 equal parts called Toques, or Touch. Thus, when an ingot is said to be 93 Touch, it is understood to contain so many parts of pure metal, and 7 parts of alloy, making in the whole 100.

These decimal proportions may be converted into the English mode of computation by the following analogies.

Suppose Chinese Gold be 91.66 Touch, say as $100 : 91.66 :: 12 : 11$, and *vice versa*; and to convert English Standard Silver into Chinese Touch, say as $240 : 222 :: 100 : 92.5$, the Touch of Sterling Silver. In the same manner Dollar Silver is found to be 89.166 Touch.

Pure Gold or Silver is called Sycee, and a Tale Weight of the former is worth £4. 14s. $1\frac{3}{4}d.$, and of the latter 6s. $2\frac{1}{2}d.$ Sterling.

GOLD AND SILVER INGOTS.

Silver Ingots are used as money, and weigh from $\frac{1}{2}$ to 100 Tales. Gold is not considered as money, but as merchandize. It is sold in Ingots, called Shoes, of an ascertained weight and fineness, and paid for in Tales both of Silver. If metals be sycee or pure, 10 Tales of Silver are given for 1 of Gold; but if the latter is alloyed the price is reduced accordingly. Thus, when the Gold is 96 Touch, the price is $9\frac{6}{10}$ in pure Silver; if 93 it is $9\frac{3}{10}$, and so on for any rate. These proportions, however, are subject to variation.

GOLD AND SILVER WEIGHTS.

The principal weight for the precious metals is the Catty of 16 Tales, and 100 Catties make 1 Pecul. The Tale is divided into 10 Chehs, 100 Hoons, 1,000 Lees, 10,000 Sees, and 100,000 Hoots. It is also divided into 10 Mace, 100 Candareens, and 1,000 Cash.

The Tale has been computed by various authorities to weigh 580 Grains, and hence 24 Tales equal 29 oz. Troy. Also, 29 lb. Avoirdupois equal 350 Tales.

COMMERCIAL WEIGHT.

		lb.	oz.	dr.
	1 Tale =	0	1	$5\frac{1}{3}$
16 Tales.. }	1 Catty =	1	5	$5\frac{1}{3}$
100 Catties }	1 Pecul =	133	5	$5\frac{1}{3}$ *

It should be observed, that in delivering a cargo of goods, and also in the sale of tea, English weights and scales are used; but the results are afterwards turned into Chinese Peculs and Catties according to the above proportion.

There are no Commercial Measures of Capacity used in China, as liquids, corn, provisions, &c. are sold by weight.

* It may be here observed, that when the standards of Indian Weights and Measures were sent to England in obedience to the Circular Order of the Court of Directors in 1821, no Standard whatever was received from China, but the want has been recently supplied by Mr. REEVES, the Company's Tea Inspector at Canton, who has transmitted to London a set of Chinese Weights of great accuracy in their several divisions and proportions; and their contents have been found perfectly to correspond with the above weight of the Tale, viz. 580 Grains Troy. Hence the Pecul should weigh nearly $132\frac{2}{3}$ lb. Avoirdupois, and it was so reckoned in some of the old books at the India House; but the modern computation is $133\frac{1}{3}$ as above, a number which is found very convenient in calculation. For thus 3 Peculs equal 400 lb.; 3 Catties 4 lb.; and 3 Tales 4 oz. Avoirdupois.

LONG MEASURE.

The principal long measure used in China is the Covid, Cobre, or Foot, which is various according to the subject of measurement, thus—

	Eng. Inches.
The Mathematical Foot	= 13.12
The Builders' Ditto	= 12.7
The Tailors' or Tradesmans' Ditto	= 13.33
The Surveyors' and Engineers' Ditto	= 12.58

Other long measures are mentioned by different authorities. The following Table was transmitted from Sumatra to the Court of Directors in 1822, by *Sir Thomas Stamford Raffles*, who states it to be a Chinese Table used at Fort Marlborough.

		Eng. Inches.
10 Hoons	} make	1 Hoon = 0.144
10 Choons		1 Choon.... = 1.44
5 Cheohs		1 Cheoh.... = 14.4
2 Gocheohs or Pointungs		1 Gocheoh.. = 72
		1 Tung = 144

The following measures of length are described by *Duhalde*.

10 Covids..	} make	1 Fathom
180 Fathoms		1 Li
200 Lis		1 Degree of the Meridian.

This Degree, if the Surveyor's Foot be taken, answers to 69.166 English Miles, a computation which nearly agrees with recent measurements in the latitude of Canton.

COCHIN.

(On the Malabar Coast.)

Lat. 9° 59' N.—Lon. 76° 17' E.

Accounts are kept in Rupees, divided into 16 Annas, and sometimes into 20 Fanams.

Spanish Dollars and numerous other coins pass here at a variable rate, but generally the Spanish Dollar is valued at 2 Rupees.

GOLD AND SILVER WEIGHT.

1 Sicca Rupee	}	make	{	31 Fanams
9 Fanams.....				1 Pagoda
93 Fanams.....				10 Sequins or 3 Siccas.

COMMERCIAL WEIGHTS.

42½ Surat Rupees Weight.....	}	make	{	1 Pound	=	1	1	6
25 Pounds				1 Maund	=	27	2	11
20 Maunds or 500 Pounds ..				1 Candy	=	513	6	4

By this weight sugars, spices, and metals are sold; other goods are weighed by the Maund of 30 lb. and the Candy of 600 lb.

Note.—The Cochin Standard Pound, received from India in 1822, weighs 1 lb. 2 oz. 2 dr., but the above computation is made from the Surat Rupee, according to the instruction sent with the despatch.

MEASURES.

The measure of capacity used at Cochin contains $1\frac{1}{4}$ Pint.

The Parrah, used for grain, contains 45 such measures, or 7 Gallons nearly.

The Choadony for oil contains 24 such measures, or $3\frac{3}{4}$ Gallons.

Timber measure is the same as at *Travancore*, which see.

COIMBATOOR.

(*In the Mysore.*)

Lat. $10^{\circ} 55'$ N.—Lon. $77^{\circ} 6'$ E.

Accounts are chiefly kept in Sultany Rupees, which are divided into 16 Vishuns, and each Rupee may be valued at 2s. sterling. Sultany Fanams are worth about $7\frac{3}{4}d.$, and Viraya Fanams $6d.$ sterling; but their current values vary according to the proportion between gold and silver bullion, which is subject to much fluctuation.

WEIGHTS.

10 Pagodas	}	make	{	1 Pollum	=	528½ Gr. Troy.
8 Pollums				1 Cutcha Seer	=	lb. oz. dr. 0 9 10
5 Seers ...				1 Vesay	=	3 0 2
8 Vesays..				1 Maund	=	24 1 0

Cotton wool is sold by the Tucu of 50 Palams, and 2 Tucos make 1 Tola = 7½lb. Avoirdupois nearly.

MEASURES OF CAPACITY.

Grain and liquids are mostly sold here by weight.

56 Dudus Weight of Horse Grain	}	make	{	1 Puddie	=	Eng. Cub. Inches. 45.305
4 Puddies			{	1 Bulla ..	=	181.22
40 Bullas			{	1 Candaca	=	3 Winchester Bushels and 3 Gallons.

For further particulars, see MYSORE.

COILPATAM. *See MASULIPATAM.*

COLATCHY.

(*A Town in the Province of Travancore.*)

Lat. 8° 20' N.—Lon. 77° 22' E.

WEIGHTS.

20	Munjandies	}	make	{	1	Kullanjee ..	=	Gr.	78
13 $\frac{1}{2}$	Kullanjees				1	Pollum	=	105	
67 $\frac{1}{2}$	Kullanjees				5	Pollums wt.	=	lb. oz. dr.	0 12 0 $\frac{1}{2}$
100	Pollums				1	Toolum....	=	15 0 11	
25	Rautuls or 125 Pollums				1	Maund	=	18 12 13	
20	Maunds or 500 Rautuls	}	make	{	1	Candy	=	376	1 2

By the above weight, metals, spices, and sugars are sold ; other goods are weighed by the Maund of 150 Pollums, and the Candy of 600 Rautuls.

For further particulars, see TRAVANCORE.

COLUMBO.

*(In the Island of Ceylon.)*Lat. $7^{\circ} 2' N.$ —Lon. $79^{\circ} 50' E.$

Accounts were formerly kept in Rix Dollars of 12 Fanams, 48 Pice, and 144 Chalties (all Dutch denominations), but in the year 1825 the English mode of keeping accounts was established here, as well as British Silver Coin, with the following values of the money in circulation:—

The Rix Dollar	=	s. d.	sterling
„ Madras Rupee	=	1 11	„
„ Calcutta Rupee	=	2 1	„
„ Spanish Dollar	=	4 4	„

Quarter Madras Rupees are also circulated (impressed with the British Crown) at 6d. sterling each, or 4 Fanams.

COMMERCIAL WEIGHTS.

In receiving and delivering foreign goods, English weights are commonly used. The Candy or Bahar equals 500 lb. Avoirdupois. The Garce is 82 cwt. 2 qrs. $16\frac{1}{2}$ lb.

For the produce of the Island, the following Dry Measure is used:—

DRY MEASURE.

			Gall. Dec.
4 Cut Chundoos	} make	1 Cut Measure or Seer	= 0.24
$4\frac{1}{2}$ Seers		1 Coornie	= 1.15
$2\frac{1}{2}$ Coornies		1 Marcal	= 2.88
2 Marcals		1 Parrah	= 5.76
8 Parrahs		1 Amonam	= 46.08
$9\frac{3}{8}$ Amonams		1 Last	= 432.

Hence the Amonam equals $5\frac{3}{4}$ Bushels, and the Last $6\frac{3}{4}$ Quarters Winchester Measure.

The following are the dimensions of the Parrah and Seer, with their Halves and Quarters.

	Length.	Breadth.	Depth.	Contents.
PARRAH	11.56	11.56	11.56	= 5.76 Gall. &c.
Half Parrah ..	9.18	9.18	9.18	= 2.88 „
Quarter Parrah	7.28	7.21	7.28	= 1.44 „

	Diameter.	Depth.	
SEER	4.35	4.35 =	1 Quart
Half Seer ..	3.45	3.45 =	1 Pint
Quarter Seer	2.74	2.74 =	$\frac{1}{2}$ Pint

} nearly

*** For the method of converting Winchester, Wine, and Imperial Measures into each other, see page 10.

WINE MEASURE.

16	Drams	}	make	{	1 Quart
2	Quarts				1 Canade
2	Canades				1 Gallon
4	Canades, or 2 Gallons				1 Welt
75	Welts				1 Leaguer = 150 Gallons

Arrack is bought at 80, and sold at 75 Welts to the Leaguer.

The English Long and Land Measures are used in Ceylon ; but in the interior of the country (called Kandya) the following Measure is used for Land :—

KANDYAN LAND MEASURE.

		Acres.	Rds.	Per.
8 Lahas ..	} make	1 Coornie..	= 0	0 $10\frac{15}{16}$
10 Coornies		1 Peyla....	= 0	2 $29\frac{3}{8}$
4 Peylas..		1 Amonam	= 2	2 $37\frac{1}{2}$

COMMERCOLLY.

(In the District of Rajishy.)

Lat. 24° N.—Lon. 105° 30' E.

WEIGHTS.

Four different Seers have been transmitted from this station, and found to weigh as follows:—

		lb.	oz.	dr.
The Seer for brass, copper, &c. of 58	Sicca Weight	= 1	7	9
The Seer of	60 Ditto	= 1	8	8
The Seer, Factory Weight	72 11 An. 7 Pi.	= 1	13	13
The Seer of	78 Ditto	= 1	15	12

The above are the actual contents of the Seers received in London, which are lighter than the estimated weight by Rupees.

Thus the first is $3\frac{1}{2}$, the second 2, the third $\frac{3}{4}$, and the fourth 3 Drams lighter.

MEASURES OF CAPACITY.

The Rattan Seer, Dry Measure, and the Bamboo Chungah, Liquid Measure, should each weigh 60 Sicca Weight as above, and contain about $\frac{1}{5}$ of a Wine Gallon.

The LONG MEASURES received are, one 24 and another 18 English Inches.

COOLPAHAR.

(A Pergunnah in the District of Calpee.)

The Seer received.....	=	lb.	oz.	dr.
		3	1	$6\frac{1}{4}$
The Grain Measure weighs 2 Seers 15 Chittacks	=	5	15	$11\frac{1}{2}$

See CALPEE.

COSSIMBAZAR.

(A Town in the Province of Bengal.)

The following are the contents of the weights received from this place:—

		lb.	oz.	dr.
The Seer of 76 Sicca Weight	=	1	15	$1\frac{1}{2}$
„ 78 Ditto.....	=	1	15	$14\frac{1}{2}$
„ 80 Ditto.....	=	2	0	12
„ 82 10 An.	=	2	1	14

The actual weight of the several Seers above stated is less than the estimated weight by Rupees. Thus the first three are each $1\frac{1}{2}$ Dram lighter, and the last Seer about $\frac{3}{4}$ of a Dram.

The LIQUID MEASURE weighs 1 Seer of 80 Sicca weight, as above.

The LONG MEASURE, called the Haut, = $19\frac{1}{4}$ English Inches.
For further particulars, see CALCUTTA.

DARWAR.

(*A Pettah on the Dooab, under the Presidency of Bombay.*)

The New Rupee of the Madras mint (for which see *Assay Report*, No. 38) is taken as the standard.

6 Shabee Pice on an average equal 5 Madras Rupees. Hence the Pice weighs 150 Troy Grains.

COMMERCIAL WEIGHT.

The Cutcha Seer for weighing oil and spices, equals 20 Madras Rupees = 8 oz. $3\frac{1}{2}$ dr. It is divided into 72 Tanks, each containing 50 Grains Troy.

GRAIN AND SALT MEASURE.

The Pucka Seer (sometimes called Pao) equals 116 Madras Rupees, when filled with nine kinds of grain mixed together. It weighs 2 lb. 15 oz. $11\frac{1}{2}$ dr. ; and measures 101 Cubic Inches.*

4 Pucka Seers = 1 Pylee or Chittee = 11 lb. 14 oz. 14 dr.

LIQUID MEASURE.

4 Dhurra } make { 1 Mun
20 Muns } { 1 Randy

The Dhurra generally contains 12 Seers, but varies from 10 to 14.

LONG MEASURE.

	Eng. Inches.
The Hath for Turbands and other Cotton Cloths	= $19\frac{3}{8}$
The Guz for Broad Cloth, Chintz, &c.	= $32\frac{3}{4}$

* The nine kinds of grain usually mixed together in this part of India, in order to ascertain the weight of the Seer of Capacity, are Wheat, Toor, Hurburr, Roolthee, Moony, Oored, Joowaree, Paddy, and Mudkee.

DECKAN POONA.

(*A City in the Southern Mahratta Country.*)

For the different Rupees of this place, see *Assay Report*, Nos. 47, 48, 49, and 50, page 20.

GOLDSMITHS' WEIGHT.

2 Whats..	} make	1 Goonj	=	Gr. 1.995
2 Goonjees		1 Wall	=	3.99
4 Walls ..		1 Massa	=	15.97
12 Massas		1 Tolla	=	191.66
24 Tollas..		1 Seer..	=	4600.

COMMERCIAL WEIGHT.

The Seer contains 72 Tanks or Tollas, and equals 80 Ankosee Rupees, or 1 lb. 15 oz. $8\frac{1}{2}$ dr.

By this Seer articles of high price, such as silk, saffron, gold-thread, cochineal, spices, &c. are sold.

Ghee, areca-nuts, turmerick, cocoa-nuts, dates, &c. are sold by the Maund of $12\frac{1}{2}$ Seers = 24 lb. 10 oz. $4\frac{1}{2}$ dr.

Copper, brass, tin, pewter, and bell-metal are sold by the Maund of 14 Seers = 27 lb. 9 oz. $9\frac{2}{3}$ dr.

Iron, lead, tobacco, salt-petre, brimstone, oil, and some other articles, are sold by the Pullah of 120 Seers = 236 lb. 9 oz. 2 dr.

Vegetables and fruits are sold by the Maund of 40 Seers; and choonam, charcoal, &c. by the Candy of 20 Maunds. The Dhurra is composed of 10 Seers = 19 lb. 11 oz. $6\frac{1}{2}$ dr.

Two other weights are also used here, viz. the Kucha Punchseery of $2\frac{1}{2}$ Seers, and the Punchseery of 5 Seers.

DRY MEASURE.

2 Adpaos or Rolhas	} make	1 Pao Seer or Chipta	=	lb. oz. dr. 0 7 14
2 Pao Seers		1 Adseer or Ashwa	=	0 15 12
2 Adseers		1 Seer or Chathwa..	=	1 15 $8\frac{1}{2}$
2 Seers		1 Adholee	=	3 15 1
2 Adholees		1 Pylee	=	7 14 2
12 Pylees		1 Maund	=	94 9 8
$2\frac{1}{2}$ Maunds		1 Pullah	=	236 7 12
20 Maunds		1 Candy	=	1891 14 0

The Maund is sometimes reckoned at 16 Pylees = 126 lb. 2 oz. Avoirdupois.

There is also another Pullah of 120 Seers = 365 lb. 2 oz. 4 dr.

DEWASS.

(A Town in the Province of Malwa.)

For the value of the Ougein Rupee, which is current here, see *Assay Report*, No. 60, page 21.

WEIGHTS.

			lb.	oz.	dr.
80 Ougein Rupees	} make	1 Seer .. =	1	15	10
$4\frac{1}{8}$ Seers		1 Dhurree =	8	2	7
$16\frac{7}{8}$ Seers		1 Maund =	137	8	2
12 Maunds		1 Maunee =	1650	1	8

For further particulars, see MALWA.

DINDORE.

(A District within the Collectorship of Ahmednuggur.)

WEIGHTS.

The Seer is divided as at Ahmednuggur, but weighs 76 Ankosee Rupees = 1 lb. 13 oz. 15 dr.

MEASURES OF CAPACITY.

The Seer of Capacity weighs 100 Ankosee Rupees, and is divided as follows, the Tank being $239\frac{1}{2}$ Grains.

			lb.	oz.	dr.
18 Tanks ..	} make	1 Pao Seer =	0	9	$13\frac{1}{2}$
4 Pao Seers		1 Seer =	2	7	$6\frac{1}{2}$
2 Seers		1 Adholee =	4	14	13
2 Adholees		1 Pylee .. =	9	13	10
16 Pylees ..		1 Maund =	157	10	0
20 Maunds..		1 Candy.. =	3152	8	0

For further particulars, see AHMEDNUGGUR.

DOONGURPOOR.

(The Capital of a Principality, in Gujrat.)

Lat. 21° 2' N.—Lon. 71° 5' E.

The Salim Shye Rupee used here is computed to weigh 168.75 Grains; but accounts differ as to its fineness and sterling value.

WEIGHTS.

			lb.	oz.	dr.
52 Salim Shye Rupees	} make	1 Seer .. =	1	4	0 $\frac{3}{4}$
10 Seers		1 Dhurree =	12	8	7 $\frac{1}{2}$
40 Seers		1 Maund =	501	2	12
12 Maunds		1 Maunee =	6014	1	0

For further particulars, see MALWA.

ESSLAMPORE.

(A Pergunnah in the District of Calpee.)

Lat. 26° 50' N.—Lon. 79° 30' E.

Two Seers have been received from this place, which weigh 2 lb. 0 oz. 12 dr., and 2 lb. 3 oz. 15 dr.

For further particulars, see CALPEE.

FAIFOE.

(In Cochin China.)

Lat. 16° 10' N.—Lon. 108° 30' E.

MONIES.

The only currency of the country is a sort of Cash of tutenague, 600 making a Quan, which is equivalent to 2 Rupees, or 1 Spanish Dollar; this is divided into 10 Mace of 60 Cash each, the whole strung together, and divided by a knot at each Mace.

WEIGHTS.

The weights are the same as in China, and all goods are weighed by the Dotchin. For sugars they allow, instead of 100, 150 Catties to the Pecul, though the Chinese in general receive 160 such Catties.

MEASURES.

The Covid, which is the chief measure, equals 15 English Inches.

FORT MARLBOROUGH, OR BENCOOLEN.

(*In the Island of Sumatra.*)

Lat. 3° 50' S.—Lon. 103° 3' E.

Accounts are kept in Dollars of 4 Socoos and 32 Sattalees. This Dollar may be valued at 5s. sterling.

The following account of the Weights and Measures of this Settlement was transmitted in 1822 to the Court of Directors by Sir T. STAMFORD RAFFLES, with other documents respecting Sumatra.

GOLD AND SILVER WEIGHT.

		Grains.	
30 Condees 8 Kepings 1½ Ringit ..	} make	1 Coondee =	1.7722
		1 Keping.. =	53.166
		1 Ringit .. =	425.33
		1 Tael =	638.

The following weights are used at Moco Moca, and occasionally at Fort Marlborough.

		Grains.	
4 Koopang or Soocoo 4 Mas 2½ Pauh 1½ Ringit	} make	1 Koopang =	9.967
		1 Mas =	39.875
		1 Pauh .. =	159.5
		1 Ringit .. =	425.33
16 Taels or 24 Ringits	} make	1 Tael =	638.
		1 Catty .. =	10208. = 1 lb. 9 oz.
		5 dwt. 8 gr. Troy, or 1 lb. 7 oz. 5 dr. Avoirdupois.	

Black pepper is invariably weighed by English weights.

MEASURES OF CAPACITY.

		Cubic Inches.
	1 Chupah =	63
4 Chupahs }	1 Koolah =	252
800 Koolahs }	1 Coyan =	201600

The Koolah for measuring paddy, rice, and peas, is struck ; but it is heaped when measuring white pepper, coffee, baked rice, Indian corn, &c.

The Koolah of Malay rice weighs about 7 lb. ; that of Bengal rice and that of oil, nearly 8 lb. The Koolah of rice is occasionally used as a weight ; and in this case 17 Koolahs constitute the Pecul of $133\frac{1}{3}$ lb. Avoirdupois. The Koolah used in the interior districts is about half the size of that now under consideration.

The Coodie or Corge of tobacco consists of 40 baskets—of every other article of 20.

LONG MEASURES.

		Eng. Inches.
	1 Tempoh =	4.5
2 Tempohs	1 Jankal.. =	9
2 Jankals or Spans }	1 Esto =	18
2 Estos or Cubits .. }	1 Hailoh .. =	36
2 Hailohs	1 Depoh .. =	72

The Fathom of 6 feet has been established as a standard of measure in all places here, under the immediate influence of British authority.

Chinese weights and measures are used at Fort Marlborough, for which see CHINA.

FURRUCKABAD.

(A Town and District in the Province of Agra.)

Lat. $27^{\circ} 23'$ N.—Lon. $79^{\circ} 33'$ E.

The Rupee here weighs 180.234 Grains, and contains 165.215 Grains of pure metal. It is therefore worth $24\frac{1}{2}d.$ sterling, see page 14.

WEIGHTS.

	lb.	oz.	dr.
Wholesale Seer of 11 Fur ^d Sicca Weight	= 0	4	5 $\frac{3}{4}$
Retail Seer of..... 14 Ditto	= 0	5	8 $\frac{3}{4}$
Spice Seer of 82 Ditto	= 2	0	7

GANJAM. See MASULIPATAM.

GHOUHOWN, GHROWLLE, AND HUMMERPORE.

(Pergunnahs in the Province of Calpee.)

The following standards have been received at the India House from these places :

	lb.	oz.	dr.
From Ghouhown, the Seer for wholesale	2	2	0
the Seer for retail	2	4	12 $\frac{1}{4}$

From Ghrowlle, the Seer for all purposes.....	1	15	0 $\frac{3}{4}$
the Measure for grain, filled with water, weighs	2	8	12

The Long Measure or Guz answers to 39 $\frac{1}{4}$ English Inches.

From Hummerpore, the Seer weighs.....	2	0	7 $\frac{3}{4}$
---------------------------------------	---	---	-----------------

The Guz answers to 39 English Inches.

GOA.

(On the Coast of Malabar.)

Lat. 15° 30' N.—Lon. 73° 42' E.

Accounts are kept in Pardos, Tangas, Vintins, and Budgerooks, but there are good and bad of each kind ; 1 Pardo is worth 4 good or 5 bad Tangas ; 16 good Vintins, or 20 bad ; 300 good Budgerooks, or 360 bad : the Pardo is also divided into 240 good or 300 bad Reas. Thus in all cases the good is to the bad as 5 to 4.

The current coins are, the St. Thomé, a gold piece of nearly

the weight of a Ducat, which passes for 11 good Tangas; it weighs $53\frac{1}{2}$ Grains Troy, is of the fineness of 18 carats, and worth about 6s. 8d. sterling.

The silver coin is the Pardo, which is of two sorts: the Pardo Xeraphin passes current for 5 good Tangas, each about $7\frac{1}{2}$ d. sterling; and the common Pardo for 4 Tangas.

The Budgerook is made of tin, having on one side a globe, and on the other two arrows crossed.

Spanish Dollars, Venetians, Rupees, and all other foreign coins pass current here, but the price fluctuates according to the demand and supply in the market.

COMMERCIAL WEIGHT.

The Quintal of 4 Arobas, or $129\frac{1}{2}$ lb. Avoirdupois is in common use; but they have also the Indian Candy, thus divided:—

		lb.	oz.	dr.
	1 Rattle =	1	0	8
24 Rattles }	1 Maund =	24	12	0
20 Maunds }	1 Candy =	495	0	0

MEASURES OF CAPACITY.

Corn and rice are sold by the Candy of 20 Maunds, equal to 14 Winchester bushels nearly. The Maund is divided into 24 Medida.

The Long Measures are the Portuguese Vara and Covado; the former $1\frac{1}{2}$ English Yard; the latter $26\frac{2}{3}$ Inches.

GOMBROON OR GAMRON.

(Called also *Bender Abassi*.—*In the Persian Gulf*.)

Lat. $27^{\circ} 40'$ N.—Lon. $55^{\circ} 50'$ E.

Accounts are kept in Mamoodies current of 20 Gassas; also in Shakees of 10 Coz or Pice.

A Toman contains 100 Mamoodies; a new Abassee, 2 Mamoodies, or 4 Shakees or Shatreas; a Shakee, 10 Coz or Cozbaugues, a small copper coin. The Shakees are imaginary money, in which

bargains are made ; the returns for goods, shewing 7 or 8 per cent. for the exchange, are generally made in Abassees.

A Mamoodie is to contain $\frac{2}{3}$ Silver and $\frac{1}{3}$ Copper ; 100 Mamoodies, coined at Avasa, in Chusistan, weigh $71\frac{3}{4}$ Mussals, or Miscals, equal to 5136 English Grains. Hence a Mamoodie contains $20\frac{1}{2}$ Grains of fine silver ; 100 being worth about 24s. or nearly 3d. each.

Various sorts of coins pass at GOMBROON, nearly as follow :—

Venetian.....	at 28 Shakees.
Rupee.....	$6\frac{3}{4}$ to 9
Dollar.....	$13\frac{1}{2}$ to 20
Larees (Ispahan money)....	$2\frac{1}{2}$

Abassees and Sequins are the common coins ; of the latter there are several kinds, the Venetians being the best by 2 per cent. When Venetian Ducats are mixed with others, the whole go by the name of Sequins ; but when separate, one sort is called Venetians, and all the rest Gubbers.

GOLD AND SILVER WEIGHT.

Gold and silver, and other valuable commodities, are weighed by the Miscal, of 2 dwt. $23\frac{1}{2}$ gr.

COMMERCIAL WEIGHTS.

The larger weights are of different sorts, and vary according to the commodities sold, and the places where used.

The Maund Tabree weighs $6\frac{3}{4}$ lb. Avoirdupois in commerce, but only $6\frac{1}{4}$ in the bazar. By this weight, sugar, copper, tutenague, and all kinds of drugs are sold.

The Maund Copra is $7\frac{3}{4}$ lb. at the Custom House, but in the Bazar from $7\frac{1}{4}$ lb. to $7\frac{1}{2}$ lb. By this weight, rice, almonds, raisins, and other provisions are sold.

The Maund Shaw is equal to 2 Maund Tabree or $13\frac{1}{2}$ lb.

MEASURES.

The Long Measure is the Guz, 93 of which are reckoned to 100 English Yards. Hence 1 Guz = 3 Feet $2\frac{7}{8}$ Inches.

HANSOOT.

*(A Town in the District of Broach.)*Lat. $21^{\circ} 32'$ N.—Lon. $72^{\circ} 59'$ E.For the Monies, see *Assay Report*, Nos. 64 and 65, page 21.

The following are the weights and measures:—

MARKET SEER.

			lb.	oz.	dr.
38 Broach Rupees Weight	} make	1 Seer ..	=	0	15 7
40 Seers		1 Maund	=	38	9 9
20 Maunds		1 Candy	=	771	15 4

PERGUNNAH SEER.

			lb.	oz.	dr.
$38\frac{1}{2}$ Broach Rupees Weight	} make	1 Seer ..	=	0	15 11
40 Seers		1 Maund	=	39	3 10
20 Maunds		1 Candy	=	784	8 8

The Pergunnah Seer, as above stated, is 1 Dram heavier than the estimated weight by Rupees.

OIL MEASURE.

			lb.	oz.	dr.	
38 Broach Rupees Wt.	} make	1 Seer ..	=	0	15 7	= $31\frac{1}{2}$ Cubic Ins.
42 Seers		1 Maund	=	40	8 6	
20 Maunds		1 Candy	=	810	7 8	

Sea samum is weighed by the Market Seer.

LONG MEASURE.

24 Tussoos make 1 Guz = $27\frac{1}{8}$ English Inches.

For further particulars, see BROACH.

HAVERY.

(A Pettah in the Dooab of Agra.)

The weights received from this place are the Cutcha Seer for weighing ghee, tamarinds, pepper, &c. which contains—

In buying, $23\frac{1}{4}$ Madras Rupees	Weight	=	9	9
In selling, $20\frac{1}{8}$ ditto		=	8	$4\frac{1}{2}$

The Dhurra for buying is $12\frac{7}{8}$ Seers; and for selling 12 Seers.

The Pucca Seer for grain, salt, &c. measures 82 Cubic Inches; and when filled with nine kinds of grain, mixed together, weighs $94\frac{1}{2}$ Madras Rupees, or 2 lb. 6 oz. 13 dr. See the note to DARWAR, page 70.

The Long Measure is the Guz of 24 Tussoos, = $34\frac{3}{4}$ Inches.

HYDERABAD.

(*A City in the Province of Hyderabad.*)

Lat. $17^{\circ} 15'$ N.—Lon. $78^{\circ} 42'$ E.

[** There is another City of the same name in the province of Sinde, Lat. $25^{\circ} 22'$ N., Lon. $68^{\circ} 41'$ E., from which, however, neither standards nor specifications have been received in London.]

For the Monies of this place, see *Assay Report*, No. 111, page 23.

Grain is sold by the following weights:—The Seer being equal to 13896 Grains Troy, or 1 lb. 15 oz. 12 dr. Avoirdupois.

			lb.	oz.	dr.
5 Hyderabad Rupees	} make	1 Chittack	=	0	$1\frac{15\frac{3}{4}}{4}$
16 Chittacks		1 Seer	=	1	15 12
5 Seers		1 Punsarry	=	9	14 12
12 Ditto		1 Small or Cutcha Maund	=	23	13 0
40 Ditto		1 Great or Pucka Maund	=	79	6 0
120 Ditto		1 Selling Pullah	=	238	2 0
124 Ditto		1 Purchasing Pullah	=	246	1 0

The Cloth Measure answers to $35\frac{1}{3}$ English Inches.

INDORE.

(*In the Province of Malwa.*)

Lat. $22^{\circ} 51'$ N.—Lon. $76^{\circ} 10'$ E.

For the Monies of Indore, see *Assay Report*, Nos. 60 and 61, page 21.

WEIGHTS.

			lb.	oz.	dr.
82 Ougien Rupees	} make	1 Seer	=	2	0 6 $\frac{3}{4}$
5 Seers		1 Pusseree or Dhurree	=	10	2 1 $\frac{3}{4}$
20 Seers		1 Maund	=	40	8 6
12 Maunds		1 Maunee	=	486	4 8

The above Pusseree is called the Small or Kuranah (dry goods) Pusseree, by which every thing is sold in the Bazar; but the Bunniah (Retail Merchant) purchases grain by a larger or Grain Pusseree, which equals 10 lb. 4 oz. 11 dr. The Maund for grain consists only of 20 Seers; but the Maund for Kuranah, as opium, ghee, spices, oil, and the like, is 40 Seers.

For further particulars, see MALWA.

JAMKHAIR.

(*A District within the Collectorship of Ahmednuggur.*)

COMMERCIAL WEIGHT.

The Seer weighs 80 Ankosee Rupees, and equals 1 lb. 15 oz. 8 $\frac{1}{2}$ dr.

MEASURE OF CAPACITY.

The Seer weighs 93 $\frac{1}{2}$ Ankosee Rupees and 1 $\frac{1}{4}$ Massa. Its divisions and multiples are as follow:—

			lb.	oz.	dr.
18 Tanks....	} make	1 Pao Seer =	0	9	3 $\frac{1}{2}$
4 Pao Seers		1 Seer.... =	2	4	14 $\frac{1}{2}$
2 Seers		1 Adholee =	4	9	13
2 Adholees		1 Pylee .. =	9	3	10
16 Pylees....		1 Maund .. =	147	10	0
20 Maunds ..		1 Candy .. =	2952	8	0

For other particulars, see AHMEDNUGGUR.

JAPAN.

Accounts are kept in these Islands in Tales, Mace, and Candareens, as in China; 10 Candareens making 1 Mace, and 10 Mace

1 Tale. The Tale is generally valued at $3\frac{1}{2}$ Dutch Florins, or about 6s. sterling.

THE GOLD COINS of Japan are Itchebos, Copangs or Cobans, and Obans; these are flat pieces of gold of an oblong shape, rounded at both ends, bearing various flowers and letters in relief.

The Itchebo is the smallest of these, and its value is about 15 Mace.

The Copang is worth 64 Mace, more or less; the old Copangs weigh 371 Dutch Asen, or 275 English Grains, and the Gold is said to be 22 Carats fine; this would give £2 4s. 7d. sterling for the value of the old Copang; but it must be observed, that the Japanese Coins are reckoned at Madras only 87 Touch, which is $20\frac{2}{5}$ Carats, and this reduces the value of the old Copang to £2 1s. 10d. sterling. The new Copangs weigh 180 English Grains, and the gold is about 16 Carats fine, which gives their value 21s. 3d. sterling.

The Oban is the largest gold coin, and is thrice the value of the Copang.

THE SILVER MONEY is the Schuit, which weighs 4 Ounces 18 Dwts. 16 Grains, English Troy, and is 11 Ounces fine. This gives its value £1 5s. 3d. sterling. Most payments are made in silver Ingots of different sizes, the values of which are determined by their weight; the largest is about 7 Ounces, and the smallest 84 Grains English Troy, and the fineness is $\frac{1}{2}$. There is also a little globular piece of silver, called Kodama, bearing the figure of a Japanese Deity, with several characters. It varies in size and value from 5 to 15 Candareens.

The Sennis or Cashes are small pieces of iron, copper, or brass, having a square hole in the middle, through which, as in China, they are strung on a wire, or thread, in various numbers, 600 of the smallest sort being reckoned to a Tale.

A Spanish Dollar is valued in payments at from 7 Mace to 74 Candareens, which nearly agrees with the valuation before given of the silver Tale.

WEIGHTS.

The weights of Japan are similar to those of China, thus:—

10 Candareens	} make	1 Mace
10 Mace		1 Tale
16 Tales		1 Catty
100 Catties....		1 Pecul.

The Pecul is mostly estimated to weigh $133\frac{1}{3}$ lb. Avoirdupois, as in China. It is, however, found somewhat lighter, but its exact weight has not been determined by any good authority.

The MEASURES OF CAPACITY are variously described, and therefore their contents are uncertain.

The LONG MEASURE of Japan is called the Inc, which answers to $6\frac{1}{4}$ English Feet.

JAULNAH.

(In the Province of Hyderabad.)

SMALL BAZAR WEIGHTS FOR GOLD, SILVER, DRUGS, &c.

			Troy Grains.
2 Rice Grains.....	} make	1 Oourd Grain =	.48
2 Oourd Grains		1 Wheat Grain =	.96
2 Wheat Grains.....		1 Ruttee	1.92
2 Ruttees		1 Wall.....	3.84
4 Walls		1 Masha	15.375
12 Mashas		1 Tola	184.5
$4\frac{3}{4}$ Tolas, or 57 Mashas		1 Chittack	876.7
16 Chittacks.....		1 Seer	14027

which is equivalent to the Seer in Pucka Weights, viz. 2 lb. 0 oz. 1 dr.

BAZAR PUCKA WEIGHTS FOR GRAIN, &c.

			lb.	oz.	dr.
$5\frac{1}{4}$ Pice	} make	1 Chittack =	0	2	0
16 Chittacks, or 80 Rupees		1 Seer =	2	0	1
40 Seers		1 Maund.. =	80	2	8
3 Maunds		1 Pullah.. =	240	7	8

BAZAR CUTCHA WEIGHTS FOR GHEE, TOBACCO, &c.

			lb.	oz.	dr.
16 Chittacks }	} make	1 Seer .. =	2	0	1
12 Seers .. }		1 Maund =	24	0	12

LIQUID MEASURES.

			lb.	oz.	dr.
16 Chittacks	} make	1 Seer..	=	2	0 1
12 Seers....		1 Maund	=	24	0 12
10 Maunds		1 Pullah	=	240	7 8

CLOTH MEASURE.

			Eng. Inches.
3 Unglees ..	} make	1 Girrah..	= $2\frac{1}{10}$
8 Girrahs ..		1 And Guz	= $16\frac{8}{10}$
2 And Guzes		1 Guz	= $33\frac{6}{10}$

JAVA. *See BANTAM AND BATAVIA.*

JUDDA.

(A Town of Arabia, on the Red Sea.)

Lat. 21° 29' N.—Lon. 39° 15' E.

Accounts are kept in Cruse of 40 Duanees each. No money is minted here; but foreign coins of all denominations pass at certain rates, which are occasionally stated in tables for the use of trade and business. Thus 100 Spanish Dollars generally pass for 25 Cruse, and other monies in the same proportion; but as these proportions are subject to variation, any further statements here are deemed useless.

WEIGHTS.

			lb.	oz.
15 Vakias	} make	1 Rattle	=	1 1
2 Rattles		1 Maund	=	2 $3\frac{3}{5}$
10 Maunds		1 Frazil	=	22 4
10 Frazils		1 Bahar	=	222 8

The measures here are too various to be stated with any degree of accuracy.

JUMBOOSUR.

(A Town in the Province of Gujrat and District of Broach.)

COMMERCIAL WEIGHTS.

MARKET SEER.

			lb.	oz.	dr.
40 Broach Rupees Weight	} make	1 Seer ..	=	1	0 2½
40 Seers		1 Maund	=	40	6 4
20 Maunds		1 Candy	=	807	3 0

The above Seer has been found 1 Dram lighter than the estimated weight by Rupees; and the following Seer has been found $\frac{1}{4}$ of a Dram heavier.

PERGUNNAH SEER FOR DRY GOODS.

			lb.	oz.	dr.
40¾ Broach Rupees Weight	} make	1 Seer ..	=	1	0 9
40 Seers		1 Maund	=	41	6 8
20 Maunds		1 Candy	=	828	2 0

In weighing cotton the Market Seer is used, 42 of which are reckoned to the Maund.

LONG MEASURE.

24 Tussoos make 1 Guz = $27\frac{1}{8}$ English Inches.

For Measures of Capacity and other particulars, see BROACH.

JUNGYPORE.

(A Town in the Province of Bengal.)

The following standards only have been received from this place:—

The Seer, which is divided into 16 Chittacks = 1 lb. 8 oz. $0\frac{1}{2}$ dr.

The Seer, Liquid Measure, contains $50\frac{1}{2}$ Cubic Inches.

The Cubit = 18 English Inches.

JUNKCEYLON.

(An Island off the Western Coast of Malay.)

All kinds of Indian coins pass current here, and likewise Spanish Dollars. There are besides certain pieces of tin, called Poot, which are used as money, and serve likewise as weights. Thus—

$$\begin{array}{l} 4 \text{ Poots} \\ 10 \text{ Vis ..} \\ 8 \text{ Capins} \end{array} \left. \vphantom{\begin{array}{l} 4 \\ 10 \\ 8 \end{array}} \right\} \text{make} \left\{ \begin{array}{l} 1 \text{ Vis} \\ 1 \text{ Capin} \\ 1 \text{ Bahar} \end{array} \right.$$

which is equal to $6\frac{1}{2}$ Bengal Factory Maunds, or 485 lb. 5 oz. $5\frac{1}{3}$ dr. Avoirdupois.

The China Pecul is also in use here.

SUNDRY PLACES.

The following are the contents of different standards received from the annexed places:—

	Ankosee Rup.	lb.	oz.	dr.	
KATEE—The Seer weight.....	= 80	= 1	15	$8\frac{1}{2}$	} in Ahmednuggur
Ditto of Capacity	= 95	= 2	5	8	
KOOTOL and KURMULLA—Ditto	= 100	= 2	7	$6\frac{1}{2}$	
KURDA—The Seer weight	= 80	= 1	15	$8\frac{1}{2}$	} in Gujrat
Ditto of Capacity	= 90	= 2	3	$7\frac{1}{2}$	
	Seers. Pice.				
KOOMBHAREEA—The Maund of ..	40 8	= 37	13	10	} near Surat
KUROD—Ditto	40 15	= 37	15	$8\frac{1}{2}$	

KOTAH.

(A Town in Ajmeer.)

Lat. 25° 11' N.—Lon. 75° 48' E.

The Kotah Rupee weighs 174.8 Grains, and contains 159.7 Grains of pure metal. It is therefore worth 23d. sterling.

WEIGHTS.

		lb.	oz.	dr.
30 Cotah Rupees	} make	1	Seer ..	= 0 12 0
5 Seers		1	Dhurree	= 3 12 0
40 Seers		1	Maund	= 30 0 0
12 Maunds		1	Maunee	= 360 0 0

MEASURES.

48 Pice	} make	{	1 Pye....	=	lb.	oz.	dr.
18 Pye..			1 Seyn ..	=	1	14	5½
20 Seyn			1 Maunee	=	34	2	3
					682	11	12

The Kotah Pice, on which this is founded, weighs 18 Massah, or 276.6 Grains.

LOHEIA.

(*In Arabia, on the Red Sea.*)

Lat. 15° 44' N.—Lon. 42° 44' E.

The only money is a small piece of base and adulterated silver, about the size of a sixpence, called Commassee, and by this all different denominations of foreign coins are ascertained. There are likewise Half Commassees, which are the smallest coin current.

1 Venetian Sequin	passes for	90	Commassees.
1 Fundunclee	.....	80	ditto
1 Barbary Sequin	.....	80	ditto
1 Dollar, or Patack	.....	40	ditto

WEIGHTS.

The weights are the Dram, Ounce, Rottolo, and Quintal. Their proportions are as follow:—

10 Drams..	} make	{	1 Ounce
16 Ounces			1 Rottolo
100 Rottolos			1 Quintal.

The Rottolos are of two sorts, one of 140 Drams, which is used in weighing fine goods; the other of 160, which is used in weighing sugar, lead, and other heavy articles. There is also another weight, called the Faranzula, of 20 Rottolos.

The long measure is the Peek of 27 Inches.

LUCKIPORE.

*(In the Province of Bengal.)*Lat. $24^{\circ} 43'$ N.—Lon. $92^{\circ} 55'$ E.

The following standards have been received from this station :—

	Sic.	Rup.	An:	Pi.	lb.	oz.	dr.
Factory Seer	=	72	11	7	=	1 14	$2\frac{1}{2}$
Bazar Seer	=	82	10	0	=	2 1 14	

Cubit for Cloth, unwashed = 19 English Inches
 Ditto for Cloth, washed.. = 18 Ditto

LUCKNOW.

*(In the Province of Oude.)*Lat. $26^{\circ} 53'$ N.—Lon. $80^{\circ} 53'$ E.

The standard Seer received from this place is estimated at 100 Lucknow Rupees, and has been found to weigh 2 lb. 7 oz. $6\frac{3}{4}$ dr.

MACASSAR.

*(In the Island of Celebes.)*Lat. $5^{\circ} 10'$ S.—Lon. $119^{\circ} 20'$ E.

Accounts are kept in Rixdollars of 40 Stivers. Spanish Dollars are the common coin, and the undermentioned also pass current, at the following rates:—

Ducatoons.....	13 Schillings	Bombay Rupees	5 Schillings
English Crowns	10 Ditto	Madras Rupees	5 Ditto.

The exchange is 4 Rixdollars for 3 Spanish Dollars. All bargains are made in the former, which is a nominal coin. There is also a kind of Mace, 7 of which go to a Dollar.

WEIGHTS.

Gold and silver are weighed by the Tale of 16 Mace, which equals $827\frac{2}{3}$ Dutch Asen, or 614 English Grains.

All merchandize is weighed by the Dotchin, and then reduced to other weights. The Pecul is 100 Catties, or 135 lb. 10 oz. Avoirdupois.

The Gantag among the natives is $7\frac{2}{3}$ lb. Dutch Troy, or 8 lb. 5 oz. Avoirdupois; but the Gantag used by the Dutch Company is $11\frac{1}{2}$ lb. Dutch Troy, or $12\frac{1}{2}$ lb. Avoirdupois.

MADRAS.

(*The Presidency of Fort St. George.*)

Lat. $13^{\circ} 4' N.$ —Lon. $80^{\circ} 22' E.$

For the monies of MADRAS, see page 16.

The weights and measures of this Presidency are as follow:—

GOLD AND SILVER WEIGHT.

The precious metals, among the natives, are sold by the Pagoda Weight, which is reckoned at 52.56 Grains; but English Troy Weight is used here by Europeans, both for gold and silver, whether wrought or unwrought.

COMMERCIAL WEIGHT.

10 Pagodas	} make	1 Pollam =	lb.	oz.
8 Pollams		1 Seer .. =	0	$1\frac{1}{4}$
5 Seers ..		1 Vis .. =	0	10
8 Vis		1 Maund =	3	2
20 Maunds		1 Candy =	25	0
			500	0

The above are the weights adopted generally at Madras; but those used in the Jaghire (the territory round this city belonging to the East India Company), as also in several other parts of the Coromandel Coast, are called the Malabar Weights, for which see MALABAR.

MEASURES OF CAPACITY.

			Cub. Inches.
8 Ollucks	} make	1 Olluck	= 11.719
8 Measures		1 Measure, or Puddy =	93.752
5 Marcals		1 Marcal	= 750
400 Marcals		1 Parah of Chunam =	3,750
		1 Garce	= 300,000

The Marcal and lesser measures, when made of wood, are round, and rimmed with iron or brass. The Marcal is $9\frac{3}{16}$ Inches deep, and $10\frac{3}{8}$ Inches diameter inside, and therefore weighs 27 lb. 2 oz. 2 dr. Avoirdupois of spring water: hence 43 Marcals are equal to 15 Winchester Bushels. The Parah measures 2 Feet square, and $6\frac{1}{2}$ Feet deep.

When grain is sold by weight, $9256\frac{1}{2}$ lb. equal 18 Candies. $12\frac{1}{2}$ Maunds are a Garce, which is nearly $17\frac{1}{2}$ Winchester Quarters.

The Puddy, by which milk, ghee, oil, and some other liquids are sold, is equal to the Puddy in grain measure, containing 8 Ollucks, thus—

8 Ollucks	} make	1 Measure, or Puddy
8 Measures		1 Marcal
20 Marcals		1 Candy = 64 Gallons

But for wine, spirits, &c. English measure is used.

LAND MEASURE.

Land is generally measured with a Gunter's chain of 100 Links, or with a rod of 10 Feet, and reduced to Cawnies, Grounds, and square Feet, agreeably to the following table:—

60 Feet long, and 40 Feet broad, make 1 Ground, or Mauney, equal to 2400 square Feet.

24 Grounds, or Maunies, make 1 Cawney, equal to 57,600 square Feet.

The Indian Cawney is in proportion to the English Acre, as 1 is to 1.3223, or as 121 is to 160 nearly.

In the Jaghire, the Ady, or Malabar Foot, is used, which is 10.46 Inches English; 24 Adies make 1 Culy; and 100 square Curies make 1 Cawney, or nearly an English Acre. The common Culy, however, is 26 Adies, or $22\frac{1}{2}$ English Feet, which makes the Cawney 1 Acre $28\frac{1}{4}$ Perches.

The Covid for cloth measure is 18 Inches; but the English Yard is generally used.

DIAMOND AND PEARL WEIGHT, IN MADRAS, BOMBAY, &c.

Diamonds are mostly weighed in India by the Carat, as in England (see page 9); and rough or unwrought diamonds are generally valued according to the square of their Carat weight, at £2 sterling for each Carat. Thus a rough diamond weighing 3 Carats is valued at £18; for $3 \times 3 \times 2 = 18$.

Wrought diamonds are supposed to have lost half their original weight, and therefore they are valued according to the square of double their actual weight. Thus a wrought diamond weighing 3 Carats is worth £72; for $6 \times 6 \times 2 = 72$.*

PEARLS AT MADRAS are valued by two kinds of weights, real and nominal. By the former they are weighed, and by the latter sold. The real weight used at Madras is the Mangelin, which is divided into 16 parts, and is equal to 6 English Grains. The nominal weight is the Chow, which is divided into 64 parts; and is deduced from the Mangelin, as follows:—

Rule.—*Square the number of Mangelins, and divide three-fourths of this product by the number of Pearls. The quotient is the number of Chows.*

Thus, to find the number of Chows, and the sterling value of 21 pearls weighing 16 Mangelins, at 12 Pagodas per Chow— $16 \times 16 \times \frac{3}{4} = 192$, and this divided by 21 = 9 Chows $9\frac{1}{7}$ Part, which, at 96s. per Chow = £43 17s. $8\frac{1}{7}d$.

PEARLS AT BOMBAY, as at Madras, have a real and a nominal weight. The real weight is the Tank, which is divided into 24 Ruttee, the Ruttee into 4 Quarters, and the Quarter into 4 Annas; and equals 72 English Troy Grains.

* This mode of valuing diamonds, though stated in works of high authority, must admit of exceptions, on account of the variety of their quality: besides, there are diamonds of so large a size, as to amount to nearly a million of pounds sterling by such valuation.

The nominal weight is the Chow, which is divided into 4 Quarters, the Quarter into 25 Docra, and the Docra into 16 Buddams. The nominal standard is 1 Tank to 330 Chows. The following is the general rule for reducing the real to the nominal weight:—

Rule.—*Multiply the square of the number of Tanks by 330, and divide by the number of Pearls; the quotient is the number of Bombay Chows.*

Suppose it were required to find the number of Chows in 45 pearls, weighing 5 Tanks: then $5 \times 5 \times 330 = 8250$; and this divided by 45 = 183 Chow, 1 Quarter, 8 Docra, $5\frac{3}{4}$ Buddams.

Again: to find the sterling value of 10 pearls, weighing 1 Tank, 2 Ruttee, 1 Quarter, at 12 Rupees per Chow, the Rupee being valued at 2s.

	Chow.	Qrs.	Docra.	Bud.	
	330	0	0	0	Standard of 1 Tank
	27	2	0	0	Ditto.... of 2 Ruttee $\frac{1}{12}$
	3	1	18	12	Ditto.... of 1 Quarter $\frac{1}{4}$
	360	3	18	12	Multiplied again by 1 Tank, 2 Ruttee, 1 Quarter.
Ruttee 2 = $\frac{1}{12}$	30	0	7	13	
Quarter 1 = $\frac{1}{8}$	3	3	0	15	
Pearls 10)	394	3	2	8	

Answer—Chows..39 1 22 12 at 24s. = £47 7s. 5½d.

CHOWS OF MADRAS AND BOMBAY COMPARED.

From the above rule of Bombay Chows, it appears, that if t represents the number of Tanks, and n that of Pearls $\frac{330 t^2}{n} =$ the Bombay Chow. And again, according to the foregoing rule of Madras Chows, if m represents the number of Mangelins, and n that of Pearls, then $\frac{3 m^2}{4 n}$ the Madras Chow.

Now as 1 Tank equals 12 Mangelins, and as n may, for the sake of illustration, be considered a constant quantity, it will be found, by reducing those expressions to numbers, that 18 Madras Chows weigh 55 Chows of Bombay, a proportion of nearly 3 to 1; but the difference of price is generally about 4 to 1: for, it may be observed, that the pearls sold at Madras, which are found in the

Gulf of Manar, are more highly esteemed in Europe than those from the Persian Gulf, which are sold at Bombay.

Pearls in other countries are mostly valued, like diamonds, by the square of their Carat weight; but when several are sold together, they are valued directly as the square of their weight, and inversely as their number. Thus, 10 pearls of a certain weight and quality, are double the value of 20 of the same weight and quality. To these general rules, however, there are exceptions.

MADURA.

(A City in the Southern Carnatic.)

Lat. $9^{\circ} 51'$ N.—Lon. $78^{\circ} 13'$ E.

The Weights and Measures here are the same as at Trichinopoly, with the following exceptions:—

The Madura Seer, for weighing gold and silver, equals 80 Madura Pagodas Weight, and answers to 4480.7 Grains Troy, or $10\frac{1}{4}$ Ounces Avoirdupois, and 39.244 such Seers are equal to 1 Maund of 25 Pounds. The Seer is divided into 50, 30, 20, &c. parts, down to the 64th part of a Pagoda, which is 56 Grains nearly.

The Measure used for all sorts of grain, and also for gingely, oil, &c. is equal to $1\frac{3}{4}$ English Quart. Six of these measures make 1 Mercal, or $2\frac{3}{8}$ Gallons nearly.

For further particulars, see TRICHINOPOLY.

MAGINDANAO.

(One of the Philippine Islands.)

Lat. $7^{\circ} 9'$ N.—Lon. $124^{\circ} 40'$ E.

The general currency here, as in Sooloo, is the Chinese Kangan, which is a piece of coarse cloth, thinly woven, 19 Inches broad, and 6 Yards long. A bundle of 25 pieces, called a Gandang, is

valued at 10 Spanish Dollars. There are also used as currency, the Cowsong, a kind of nankeen, dyed black ; and the Kompow, a strong white Chinese linen.

China Cash are likewise in use ; their price varying from 160 to 180 for a Kangan.

The Gantang weighs about 4 lb. ; 10 Gantangs make a Battell (a cylindrical measure of $13\frac{5}{16}$ Inches high, and the same in diameter) ; and 3 Battells are commonly sold for a Kangan. In speaking of the value of things here and at Sooloo, it is common to say, such a horse, &c. is worth so many slaves, the usual valuation being 1 slave for 30 Kangans.

MALABAR.

(Province of Southern India.)

In South Malabar accounts are kept in Feringy, or Porto Novo Pagodas, or Varahuns ; Pudameni, or Virraya Fanams ; and Cash. A Brahman has the exclusive privilege of coining copper money, which is recoinced every year. At the beginning of the year he issues out his money at the rate of 22 Cash per Varraya Fanam ; and buys the old ones at the rate of 40. The value of the Cash therefore gradually sinks towards the end of the year, until it falls to the 40th part of a Fanam.

WEIGHTS.

The Polam weighs 9 Pondicherry Rupees, 1 Cash, equal to 1624 Grains. The Tolam is equal to 23.192 lb.

$2\frac{1}{2}$ Polams	} make	{	1 Seer
5 Seers..			1 Visay
8 Visays			1 Tolam

Various other weights as well as measures are used along this coast, which are stated in their proper places.

MALACCA.

*(On the Malay Peninsula.)*Lat. $2^{\circ} 15' N.$ —Lon. $102^{\circ} 12' E.$

Accounts are kept in Rix Dollars, Schillings, Stivers, and Doits, which are thus divided:—

4 Doits....	} make	1 Stiver
6 Stivers ..		1 Schilling
8 Schillings		1 Rix Dollar

Most Indian coins are current here. The following are the rates at which they usually pass:—

Bombay Rupee ..	5 Schillings	Japan Cobang, stamped	80 Schillings
Madras Rupee ..	4 Ditto	Ducatoon	13 Ditto
Spanish Dollar ..	10 Ditto	English Crown	10 Ditto

A Dubbeltjee is 10 Doits, and 3 are equal to a Tangre or Schilling. 10 Tangres, or 68 Stivers, equal to a Spanish Dollar, exchange for 27 Dubbeltjees, 2 Doits. $1\frac{1}{2}$ Spanish Dollar, equal to a Pagoda, exchanges for 40 Dubbeltjees, 8 Doits. 2 Rupees, or 24 Dubbeltjees, are equal to 1 Keesers Daaldar.

WEIGHTS.

All goods are weighed here by the Dotchin, for which 1 per cent. is paid to the Captain of the Chinese, who is Dotchin-keeper.

GOLD WEIGHTS.

16 Miams	} make	1 Buncal
20 Buncals		1 Catty = 29 oz. 17 dwt. 16 gr. Troy.

GREAT WEIGHTS.

16 Tales..	} make	1 Catty	=	lb.	oz.
100 Catties		1 Pecul	=	135	0
3 Peculs		1 Bahar	=	405	0

MEASURES.

1 Ganton is equal to 6 Dutch lb. or $6\frac{1}{2}$ lb. Avoirdupois; 10 Gantons, 1 Measure; 50 Measures, 1 Last; 800 Gantons, 1

Quoyane. 40 China Peculs make a Quoyane of rice, which then weighs 5400 lb. Avoirdupois.

A Kip of Tin contains 15 Bedoors, or 30 Tampange, and weighs $37\frac{1}{2}$ lb. Dutch Troy, or 40 lb. 11 oz. English Avoirdupois.

The Covid is two-thirds of a Dutch Ell, about $18\frac{1}{8}$ English Inches.

MALDA.

(*A Town in the Province of Bengal.*)

Lat. $25^{\circ} 3' N.$ —Lon. $88^{\circ} 4' E.$

The standards received from this place are—

			lb.	oz.	dr.
Seer of 100 Sicca Weight, used at Malda	.....	=	2	9	0
Ditto 96	Mogulbarry..	=	2	7	$5\frac{1}{4}$
Ditto 82 10 An.	Jellalpore ..	=	2	1	14
Ditto 80	English Bazar	=	2	0	$14\frac{1}{4}$

The first three of the above Seers are each 1 Dram lighter than the estimated weight by Rupees, and the fourth is $\frac{1}{2}$ Dram heavier. Each Seer is divided into 16, for Chittacks, and multiplied by 40, for the Maund.

The Seers of Capacity received measure—

		Cubic Inches.	Quart.
Seer of Malda	.....	= 72	= 1.24
Ditto Mogulbarry ..	= 69.7	= 1.20	
Ditto Jellalpore....	= 57.7	= 1.00	
Ditto English Bazar	= 60	= 1.03	

MALDIVES.

(*Islands in the Indian Ocean.*)

The monies here are of silver wire, and called Larins. The value is about a quarter of a Rupee each. All other monies pass current by weight, and they frequently cut Dollars, Rupees, &c. into pieces for the convenience of business.

MALWA.

(*An extensive Territory in Central India.*)

These regions contain many cities and towns, of which little was known by Europeans before the year 1823, when Sir JOHN MALCOLM, after having reduced them to British subjection, published his "*Memoir of the past and present State of Central India*," in which he takes a view of their monies, weights, and measures; from which it appears that their *Rupees* mostly form the elements of their weights, a certain number of each sort being reckoned to a *Seer*.

The following *Rupees*, with their gross weight and touch, are extracted from the *Memoir*, and their sterling value is now added, at 5s. 2d. per oz. British standard.

CITIES.	Gross Weight.	Touch.	Pure Silver.	Sterling Value.
	Gr. Dec.		Gr. Dec.	d. Dec.
Ougien Rupee	173.56	94	163.14	23.43
Indore Ditto	173.2	93	161.07	23.13
Bhopal Ditto	168.75	89	150.18	21.57
Pertaubghur Ditto	163.6	60.85	99.55	14.3
Bhilsa Ditto	167.5	82.83	138.74	19.92
Jewry Ditto	168.5	82.20	138.50	19.89
Kota Ditto	175.5	91.36	160.33	23.03
Odeypoor Ditto . . .	167.5	71.6	119.93	17.22
Chandore Ditto . . .	170.15	91.5	156.92	22.53

Accounts are generally kept here in Current *Rupees*, *Annas*, and *Pice*, as in Bengal.

In the inferior departments of business each *Pice* or *Pie* is subdivided into 2 *Adillahs*, 4 *Chedaums*, 8 *Dumries*, 4 *Gundas*, and 96 *Cowries*. All these divisions are imaginary monies, except the *Cowries* or *Shells*.

The Silver *Rupee* varies both in its weight and fineness in the several mints of Malwa or Malwan (see *Assay Report*, Nos. 60 and 61, page 21); and as the *Seer* is reckoned to weigh a certain number of *Rupees* of the place, the commercial weights of Central India are various, as will be stated under their several heads.

The only uniform weight in this territory is that for the precious metals, which is reckoned as follows:—

GOLD AND SILVER WEIGHT.

		Grains.	
8 Chawls	} make	1 Chawl	= 0.247
8 Ruttees		1 Ruttee	= 1.979
12 Massas		1 Massa	= 15.833
		1 Tolah	= 190.

COMMERCIAL WEIGHT.

		lb. oz. dr.		
84 Salim Shye Rupees	} make	1 Seer ..	=	2 0 6
5 Seers		1 Dhurree	=	10 1 14
20 Seers		1 Maund	=	40 7 8
12 Maunds		1 Maunee	=	485 10 0

The above is the Banswarra Weight, which is extensively known in Malwa ; but many other kinds are also used there, as will be shewn in their proper places.

LONG MEASURE.

The Guz is the most common measure of length : in some places it equals 28 English Inches, and in others 32 Inches.

The Wuzza is in general use here, particularly for measuring land ; and it answers to 7 Feet $5\frac{1}{2}$ Inches English.

LAND AND ROAD MEASURES.

The Beega, or Indian Acre, contains 20 Square Wusas, or 60 Square Guz, and therefore varies as follows:—

		A.	R.	P.	
20 Wusas squared	=	0	2	2	English
60 Guz ditto, at 28 Inches	=	0	1	29	
Ditto at 32 ditto	=	0	2	17	

The Cos, or Indian Mile, varies here from $1\frac{1}{2}$ to 2 English Miles. In the map of Central India prefixed to Sir JOHN MALCOLM'S Memoir, 42 Coses are reckoned to 1 Degree.

MANGALORE.

*(On the Malabar Coast.)*Lat. $12^{\circ} 52'$ N.—Lon. $74^{\circ} 53'$ E.

Accounts are commonly kept here in Sultany Pagodas, Rupees, and Annas; others are kept in Pagodas, a nominal Fanam or Huna of 10 to a Pagoda, and Annas or 16 parts of these Fanams.

The following are the coins in common currency here, and their value in Rupees, viz.—

Ikeri, or Swamy Pagoda	 4	Rupees
Bahadary, or Hyder's Ditto	 4	Ditto
Sultany, or Tippoo's Ditto	 4	Ditto
Kristna, or Mysore Ditto	 4	Ditto
Madras, or Star Ditto	 $3\frac{1}{2}$	Ditto
Porto Novo Ditto	 3	Ditto
Canter Raya, or Ikeri Fanam	.. $\frac{1}{5}$	Ditto
Virraya Fanam	 $\frac{1}{4}$	Ditto

Of silver coins the Surat and Madras Rupees are considered of equal value, and pass for $5\frac{1}{2}$ Silver Fanams, the same as are current in Malabar; in the bazar they exchange for 10 Dudus or Dubs; but in revenue are taken for 14 Dubs each.

Of copper coins, the Bombay Pice, coined in England, and Tippoo's Dubbs, are current here; these with their fractions, $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$, are the only small coins in use.

WEIGHTS.

The Seer, or Sida, weighs 4297 Grains, which is rather more than 24 Bombay Rupees. The Seer is divided into halves, quarters, eighths, and sixteenths. The number of Seers in the Maund varies according to the goods to be disposed of.

The Maund by which goods are sold in the market is 46 Seers, or 28.14 lb. The Maund by which the merchants purchase, and by which the Company buy and sell, weighs 16 Rupees more, or 28.55 lb. Jaggery is bought and sold by the Maund of 40 Seers, or 24.47 lb.

The Candy, or Baru, contains 20 Maunds, and varies accordingly, from 571 to $589\frac{1}{2}$ lb.

MEASURES.

The Seer in the bazar is formed by mixing equal quantities of salt, and of the nine most common grains, and then by taking of the mixture 84 Bombay Rupees weight; this fills the Seer measure, and is about 73.683 cubical Inches. The Moray, or Mudi, contains 38 Seers, or about $1\frac{3}{8}$ Bushel English.

The Grain Measure, by which the farmers sell their crops, is thus formed:—64.125 cubical Inches make 1 Hany, 14 Hanies make 1 Cullishigay, 3 Cullishigays make 1 Mudi, or Moray, which is about 1.2525 Bushel.

Grain, salt, and sometimes pepper, are sold by measure; of this last, a Pucka Seer, or 73.683 cubical Inches, is reckoned to weigh $51\frac{1}{2}$ Bombay Rupees, or 21 oz. Avoirdupois. The Corge of 42 Robins for rice is 49 Morays.

MANILLA.

(In Luconia, one of the Philippine Islands.)

Accounts are kept thus:—

34 Maravedis, or 7 Granos	} make	{	1 Rial
8 Rials, or 16 Quartellos			1 Dollar, or Peso
16 Dollars			1 Doubloon.

The course of exchange between Bengal and Manilla varies from 38 to 45 Spanish Dollars per 100 Current Rupees.

WEIGHTS.

Besides the Spanish weights, the Chinese Pecul is used here. The small weights are as follow:—

1 Mexico Dollar in weight	} make	{	1 Ounce
16 Ounces			1 Pound = 1 lb. $7\frac{17}{25}$ drs. Avoir.
10 Ditto			1 Tale of Gold weight
11 Ditto			1 Tale of Silk
9 Ditto			1 Punto of Gold or Silver Thread
22 Ditto			1 Catty
8 Ditto			1 Mark of Silver.

MASSUAH.

*(In Abyssinia, on the Red Sea.)*Lat. $15^{\circ} 24' N.$ —Lon. $39^{\circ} 37' E.$

There are no coins minted in Abyssinia, but those of other countries circulate here, particularly Venetian Sequins, and Imperial or Austrian Dollars. The latter are called Patakas or Patacks. Spanish Dollars also pass; but large payments are generally made in ingots of gold, which are weighed by the Wakea, or Abyssinian Ounce; and for small payments salt bricks, dug out of the mines, are adopted, about 80 of which are valued at a Wakea of Gold. Glass beads also of all colours, perfect and broken, pass for small money, and are called Borjookes.

The relative value of monies at Massuah is as follows:—

3	Borjookes, or Grains	} make	1	Kibear
10	Kibears		1	Diwani or Para
4	Diwanis		1	Harf or Dahab
23	Harfs		1	Pataka or Dollar
$2\frac{1}{4}$	Patakas		1	Sequin.

The Pataka is also a money of account, but of fluctuating value. In 1771, according to Mr. BRUCE, 10 Patakas were worth a Wakea of Gold; but in 1806, according to LORD VISCOUNT VALENTIA, $11\frac{3}{4}$ Patakas were reckoned as the price of the Wakea.

WEIGHTS.

The weights are the Derime or Drachm, the Wakea or Ounce, the Mocha, and the Liter, Rottolo or Pound.

10	Drachms	} make	1	Wakea
12	Drachms		1	Mocha
12	Wakeas		1	Rottolo or Liter.

The Wakea weighs 400 Grains English Troy weight, and the Rottolo is therefore 4800 Grains, or 10 Ounces Troy, which equal 10 Ounces $15\frac{1}{2}$ Drachms Avoirdupois.

MEASURES.

The measure for grain is the Ardeb, which, at Gondar, is composed of 10 Madegas, each weighing 12 Ounces Cairo weight, answering to about $\frac{1}{8}$ of an English Bushel. But the Ardeb at Massuah contains 24 Madegas, and is therefore $\frac{1}{3}$ of an English Bushel nearly.

The Cuba, a measure for honey and other articles, contains 62 English Cubic Inches, or $2\frac{1}{8}$ English Pints, being very nearly equal to the French Litre.

The principal long measure is the Turkish Pic, which is $\frac{3}{4}$ of an English Yard.

MASULIPATAM.

(*In the Northern Circars.*)

Lat. $16^{\circ} 9' N.$ —Lon. $89^{\circ} 11' E.$

Accounts were formerly kept in Pagodas, Rupees, and Annas, but the monies and coins of all this part of the Coromandel coast are now nearly assimilated to those of Madras.

WEIGHTS AND MEASURES.

The following specifications, with their standards, have been received from official authorities in 1826:—

GOLD WEIGHT.

		Grains.	
$\frac{1}{3}$ of a Madras Pagoda	} make	1 Chunam	= 5.968
30 Chunams.....		1 Tolam	= 179.04
24 Tolams		1 Seer ..	= 4296.96

Silver is weighed against Rupees, 24 of which make 1 Seer.

COMMERCIAL WEIGHTS.

The weight used for iron bars, tin, tobacco, ghee, oil, jaggery, chillies, tamarinds, sugar, &c. from Visagapatam to Ganjam, is

the $1\frac{1}{4}$ Cutcha Seer, of 100 Madras Pagodas, weighing $12\frac{1}{2}$ oz. Avoirdupois.

Its multiples and divisions are as follow :—

2 Chattaucks	}	make	1 Nowtauk	=	lb. oz.
8 Nowtauks			1 Seer	=	0 14
5 Seers			1 Viss	=	0 10
8 Viss			1 Maund ..	=	3 2
20 Maunds ..			1 Candy ..	=	25 0
				=	500 0

There is also a Pucka Seer in use for Moguls, Moormen, and generally for persons coming from Calcutta and Hyderabad, viz.—

2 Chattaucks	}	make	1 Nowtauk	=	lb.
8 Nowtauks			1 Seer	=	0 4
5 Seers			1 Viss	=	2
8 Viss			1 Maund ..	=	10
				=	80

The Cutcha Seer of 90 Madras Pagodas, used by Merchants in dealing with each other, is thus divided :—

2 Chattaucks	}	make	1 Nowtauk	=	lb. oz.
8 Nowtauks			1 Seer	=	0 1 3/2
5 Seers			1 Viss	=	0 11 1/4
40 Seers			1 Maund ..	=	3 8 1/4
20 Maunds ..			1 Candy ..	=	28 2
				=	562 8

The weight used for brass, copper, and tutenag, is the Seer of 72 Madras Pagodas, which is thus divided :—

2 Chattaucks	}	make	1 Nowtauk	=	lb. oz.
8 Nowtauks			1 Seer	=	0 1 1/8
40 Seers			1 Maund ..	=	0 9
20 Maunds ..			1 Candy ..	=	22 8
				=	450 0

The $1\frac{1}{4}$ Seer of 96 Madras Pagodas is used for weighing cotton, as follows :—

32 $1\frac{1}{4}$ Seers	}	make	$1\frac{1}{4}$ Seer	=	lb. oz.
20 Maunds			1 Maund	=	0 12
			1 Candy	=	24 0
				=	480 0

From Coilpatam to Visagapatam, these weights are in use, under the following denominations and divisions :—

2 Yabbolam	}	make	1 Yabbolam	=	lb.
16 Puddalum			1 Puddalum	=	0 3/4
20 Maunds ..			1 Maund ..	=	1 1/2
			1 Candy	=	24
				=	480

GRAIN MEASURE.

2 Giddahs	}	make	1 Arsolah or	$\frac{1}{4}$ Seer	=	Pints. $0\frac{17}{32}$
2 Arsolahs			1 Solah	$\frac{1}{2}$ do.	=	$1\frac{1}{16}$
2 Solahs			1 Zavah ...	1 do.	=	$2\frac{1}{8}$
2 Zavahs			1 Mannikah	2 do.	=	$4\frac{1}{4}$
6 Mannikahs			1 Mercal ..	12 do.	=	$3\frac{1}{8}$ gal.
80 Mercals			1 Candy ..	960 do.	=	250
5 Candies or 400 Mercals			1 Garce....	4800 do.	=	1250

The Half Mercal of 6 Seers is in general use among the natives.

CLOTH MEASURE.

			1 Palm	=	Inches. $3\frac{3}{16}$
2 Palms	}	make	1 Span	=	$6\frac{3}{8}$
3 Spans			1 Cubit	=	$19\frac{1}{8}$
2 Cubits			1 Yard	=	$38\frac{1}{4}$

MAURITIUS, OR ISLE OF FRANCE.

(*An Island in the Indian Ocean.*)

Lat. 20° N.—Lon. 57° E. nearly.

In this British colony government accounts are kept (since 1826) in sterling money; but merchants, shopkeepers, &c. keep their accounts in Dollars and Cents: also in Dollars, Livres, and Sols or Sous.

2 Sols	}	make	1 Cent
20 Sols, or 10 Cents			1 Livre, or Franc Colonial
200 Sols, or 100 Cents, or 10 Livres			1 Dollar Colonial,

which is valued at 4s. sterling. All the above are monies of account.

A coinage for this colony has taken place at the London mint, consisting of pieces of the same weight and fineness as the Spanish Dollar, with halves, quarters, eighths, and sixteenths, in proportion. This Dollar is valued at 4s. 4d. sterling.

Other silver coins pass at the following rates :—

		Sterling Value at 5s. 2d. per oz. standard.		Current Value for Troops and Public Officers.		Value in the Mauritius Dollar of Account.	
		s.	d.	s.	d.	Dol.	Cents.
FRENCH	{ Five Franc Piece	4	0.15	4	0	1	0
	{ Two Franc Piece	1	7.38	1	8	0	41 $\frac{1}{3}$
	{ Franc	0	9.69	0	10	0	20 $\frac{2}{3}$
SICILIAN	{ Scudo, or Dollar	4	0.62	4	1	1	02 $\frac{1}{12}$
	{ Piece of 40 Grains	1	4.40	1	5	0	35 $\frac{5}{12}$
	{ Piece of 20 Grains	0	8.20	0	9	0	18 $\frac{3}{11}$
SPANISH Dollar		4	3.79	4	4	1	08 $\frac{1}{3}$
UNITED STATES Dollar		4	3.68	4	4	1	08 $\frac{1}{3}$
EAST	{ Calcutta Rupee	2	0.56	2	1	0	52 $\frac{1}{12}$
	{ Madras & Bombay Rupee	1	11.4	1	11	0	47 $\frac{1}{12}$
AUSTRIAN Dollar		4	0.20	4	0	1	0

Gold coins pass at the following rates :—

	Current Value.			Value in the Mauritius Dollar of Account.	
	£	s.	d.	Dol.	Cents.
British Sovereign	1	0	0	5	0
20 Franc Piece	0	16	0	4	0
Doubloon of 16 Spanish Dollars	3	9	4	17	33 $\frac{1}{3}$
Bengal Gold Mohur	1	13	4	8	33 $\frac{1}{3}$
Madras and Bombay Gold Ditto	1	8	9	7	18 $\frac{3}{4}$
COPPER COINS.					
Solmarqué	0	0	0 $\frac{3}{4}$	0	1 $\frac{9}{16}$
Cash or Pice	0	0	0 $\frac{1}{2}$	0	1 $\frac{1}{24}$

WEIGHTS AND MEASURES.

The weights are the same as those of France were before the metrical system was adopted in 1795.

72 Grains

8 Gros ..

16 Ounces

100 Pounds

20 Quintals

}

make

{

1 Gros

1 Ounce

1 Pound

1 Quintal

1 Ton.

100 Pounds French, or *Poids de Marc*, are reckoned to equal

108 Pounds English Avoirdupois, with all subdivisions and multiples in proportion.*

CUSTOMARY WEIGHTS.

The TON of Sugar	=	2000 lb. French.
“ Ebony Wood	=	2000
“ Coffee	=	1400 sold per bag of 100 lb.
“ Cloves.....	=	1000
“ Cotton	=	750 sold per bale of 250 lb.
“ Grain	=	1400

LIQUID MEASURES.

4 Gills ..	} make	1 Pint
2 Pints..		1 Quart
4 Quarts		1 Gallon
2 Gallons		1 Velt = $7\frac{1}{3}$ Pints English
30 Velts..		1 Cask

In business, however, the Velt is reckoned at 2 Gallons English ; also, at 9 English Quart Bottles.

LONG MEASURE.

The French Foot, or *Pied du Roi*, used in this island, is reckoned to be larger than the English Foot as 100 to 93.89 ; but in common practice, 15 French Feet equal 16 English.

12 Lines..	} make	1 Inch
12 Inches		1 Foot
6 Feet ..		1 Toise
5 Feet ..		1 Fathom.

The tonnage of cases is 42 Cubic Feet, and the Ton of square cut timber is 32 Cubic Feet.

* Although the proportions acted upon in this colony between French and English metrology are sufficiently correct for all practical purposes, yet they do not perfectly correspond with the proportions ascertained from attested standards in 1820, at the London mint, according to which, 100 lb. French = 107.93 lb. English. Also, 15 French Feet = 15.986 English ; and 7 French Ells = $9\frac{1}{2}$ Yards English.

CLOTH MEASURE.

Cloth, linen, &c. are measured by the Aune, or Ell of 44 Inches (French); and hence 7 Aunes are reckoned to equal 9 English Yards.

LAND MEASURE.

20 Square Feet .. } make { 1 Square Perch
100 Square Perches } { 1 Acre, or Arpent.

Hence this Acre of the Mauritius answers to 1 English Acre and 7 Perches, which was the ancient *Arpent Commun* of France.

 MERGUI. See RANGOON.

MOCHA.

(In Arabia.)

Lat. $13^{\circ} 10'$ N.—Lon. $68^{\circ} 5'$ E.

Accounts are kept in Piastres, or Mocha Dollars, consisting of 80 Cavears current. The Piastre is an imaginary money, $121\frac{1}{2}$ being equal to 100 Spanish Dollars, in which payments are mostly made. The Piastre is thus worth nearly 3s. $8\frac{1}{2}d.$: other coins pass according to weight and fineness. The Venetian Sequin commonly passes for 2 Piastres 25 Cavears.

The monies coined in this country are Commassees of 7 Carats. The Commassees contain but little silver; they are used for small payments, but they rise and fall in value; 40 pass for a Dollar.

Cotton is sold by the Haraff, an imaginary money, value 1 Piastre 22 Cavears: thus 9 Haraffs are equal to $11\frac{1}{2}$ Mocha Piastres of account, as at Beetlefakkee. A Tomand is equal to 80 Larins, each being worth 80 Carats.

WEIGHTS.

GOLD AND SILVER.

				oz.	dwt.	gr.		
16	Carats..	} make	{	1	Coffola	= 0	2	0.912 troy.
24	Ditto...			1	Miscal	= 0	3	1.368
10	Coffolas			1	Vakia	= 1	0	9.12
1½	Vakia..			1	Beak	= 1	10	13.68
87	Vakias..			100 Spanish Dollars' weight.				

COMMERCIAL WEIGHT.

				lb.	oz.
15 Vakias ..	} make	{	1 Rattle ==	0	1½
40 Ditto....			1 Maund ==	3	5
10 Maunds			1 Frazil ==	30	0
15 Frazils ..			1 Bahar ==	450	0

In coffee 14½ Vakias are reckoned equal to a Rattle, 2 Rattles to a Maund, and 10 Maunds, or 290 Vakias, to a Frazil. The Rattle is only a bazar weight.

Some difference exists in the reports of the Bahar's weight, which is variously represented, as 437½ lb., 445 lb., and 450 lb. The weights at the Custom House are generally found to be heavier by two or three pounds than the regular weights; and in the interior the difference is still greater.

MEASURES.

The Tomand, or Teman, dry measure, contains 40 Mecmedas, or Kellas, and weighs, of rice, 168 lb. Avoirdupois.

The Cuddy, or Gudda, liquid measure, contains about two English Gallons, and weighs 18 lb. of water. It is divided into 8 Noosfias, each subdivided into 16 Vakias, as at Beetlefakee.

The long measures are the Cobido, or Covid, of 19 Inches, and the Guz of 25. The Baryd is 4 Farsakh, or 12 miles English nearly.

MOLUCCAS. See AMBOYNA, BANDA, TERNATE, &c.

MUNDISSOR.

(A City in the Province of Malwa.)

Lat. 24° 2' N.—Lon. 75° 15' E.

WEIGHTS.

92 Salim Shye Rupees	} make	1 Seer	=	lb.	oz.	dr.
4 Seers		1 Dhurree	=	2	3	7 $\frac{3}{4}$
15 Seers		1 Maund	=	8	13	15
12 Maunds		1 Maunee	=	33	4	4 $\frac{1}{4}$
				399	3	3

For other particulars, see MALWA.

MYSORE.

(A Province in Southern India.)

In this extensive territory there is a variety of monies, weights, and measures, the principal of which will be found under the articles, BANGALORE, COIMBATOOR, and SERINGAPATAM.

Some explanation, however, may be necessary relative to the Mysore Rupees, which will be found in the *Assay Report*, No. 86 ; but there is a Mysore Rupee extensively referred to as a standard weight, which has been long out of circulation, and is of the same weight as the Pondicherry Rupee, another traditional coin.

The weight of these coins was long doubtful, but it has been lately determined by comparison with the new Madras Rupee, which weighs 180 Grains, and 23 $\frac{3}{4}$ of which equal 24 of the Mysore or Pondicherry Rupees. Hence the latter standards may be reckoned at 179 Grains each.

The most general standard Seer throughout this province is composed of 24 of these Mysore, Pondicherry, or Sultany Rupees, and therefore answers to 4248 Grains Troy, or 9 oz. 13 dr. Avoirdupois.

For further particulars, see BANGALORE, COIMBATOOR SERINGAPATAM, &c.

NASSUCK.

(A District within the Collectorship of Ahmednuggur.)

Lat. 19° 35' N.—Lon. 74° 12' E.

WEIGHTS.

	Ankos	Rs.	Massas.	lb.	oz.	dr.
The Seer weighs	79	4	=	1	15	4½
The Seer of Capacity . .	99	2	=	2	7	1½

For other particulars, see AHMEDNUGGUR.

NATAL, OR NATTAL.

(In the Island of Sumatra.)

Lat. 0° 32' N.—Lon. 98° 57' E.

Spanish Dollars and Indian Rupees are current here, and in this part of the island, where the traffic in gold is considerable, it is frequently employed by weight as currency instead of coin.

GOLD AND SILVER WEIGHT.

		Gr.
1 Rackay	=	1.52
24 Rackays } make	1 Ammas	= 36.5
16 Ammas }	1 Tael	= 584

BENJAMIN WEIGHT.

		lb.	oz.	Avoir.
1 Tael	=	0	1½	
48 Taels..... } make	1 Catty Ootan	=	4	0
20 Catties Ootan }	1 Tompong	=	80	0

CAMPHOR WEIGHT.

		lb.	oz.	Avoir.
16 Taels..... } make	1 China Catty	=	1	5½
3 China Catties }	1 Catty Ootan	=	4	0

GRAIN MEASURE.

		Cubic Inches.
1 Pakha	=	33.575
12 Pakhas } make	1 Sukat	= 402.9
10 Sukats }	1 Tub	= 4029
80 Tubs.. }	1 Cuyan	= 322320

NEGAPATAM.

*(In the Southern Carnatic.)*Lat. $10^{\circ} 20'$ N.—Lon. $79^{\circ} 52'$ E.

WEIGHTS

The weight used for all articles of provision is the Seer, which is equal to $9\frac{1}{8}$ English Ounces, and therefore 41.558 such Seers are equal to the Maund of 25 lb. Avoirdupois. The Seer is divided into 8 Pullums. That received in London in 1826 weighs 4236 Grains Troy = 9 oz. $10\frac{1}{2}$ dr. Avoirdupois.

GRAIN MEASURE.

The measure used for all kinds of grain answers to $1\frac{1}{8}$ English Pint, and is divided into halves, quarters, and eighths. The Mercal is equal to 4 Negapatam grain measures, and therefore answers to $7\frac{1}{4}$ Pints.

OIL MEASURE.

The oil measure in general use for wholesale and retail, is equal to 1 English Quart, and is divided into halves, quarters, and eighths.

NEW HOOBLY.

*(A Pettah in the Dooab.)*Lat. $15^{\circ} 21'$ N.—Lon. $75^{\circ} 13'$ E.

The Cutcha Seer for weighing oils and groceries equals $20\frac{3}{8}$ Madras Rupees = 8 oz. 6 dr.

The Pucka Seer (wholesale) for measuring grain, salt, &c. contains $106\frac{1}{2}$ Madras Rupees = 2 lb. 11 oz. 13 dr.

The Pucka Seer (retail) measures 90 Cubic Inches, and when filled with nine kinds of grain, equals $103\frac{3}{4}$ Madras Rupees, or 2 lb. 10 oz. 10 dr.

The Dhurra contains 13 Seers.

The Guz of 24 Tussoos, for goods not sold by the piece, measures $31\frac{3}{4}$ English Inches.

For further particulars, see DARWAR.

NOLYE, or BURNUGGUR.

(*In the Province of Malwa.*)

Lat. $23^{\circ} 3' N.$ —Lon. $75^{\circ} 27' E.$

WEIGHTS.

			lb.	oz.	dr.
80 Ougein Rupees	} make	1 Seer ..	=	1	15 10
5 Seers		1 Dhurree	=	9	14 2
20 Seers		1 Maund	=	39	8 8
12 Maunds		1 Maunee	=	474	6 0

For further particulars, see MALWA.

NOWLGOOND.

(*A Pettah in the Dooab.*)

Lat. $15^{\circ} 20' N.$ —Lon. $75^{\circ} 30' E.$

The Cutcha Seer for weighing oils and groceries contains $20\frac{3}{4}$ Madras Rupees = 8 oz. $8\frac{1}{2}$ dr.

The Pucka Seer for measuring grain, salt, &c. measures 96.6 Cubic Inches, and weighs $110\frac{1}{4}$ Madras Rupees, or 2 lb. 13 oz. $5\frac{1}{2}$ dr.

The Guz of 24 Tussoos = 33 English Inches.

The Hath for Cloth = $18\frac{1}{4}$ Ditto.

For further particulars, see DARWAR.

OCKLESUR.

(A Town in the District of Broach.)

Lat. 21° 37' N.—Lon. 73° 10' E.

WEIGHTS.

MARKET SEER.

			lb.	oz.	dr.
38 Broach Rupees Weight	} make	1 Seer ..	=	0	15 6 $\frac{3}{4}$
40 Seers		1 Maund	=	38	8 13
20 Maunds		1 Candy	=	771	0 4

PERGUNNAH SEER, FOR WEIGHING KUPPAS AND GRAINS.

			lb.	oz.	dr.
39 $\frac{3}{4}$ Broach Rupees Weight	} make	1 Seer ..	=	1	0 2 $\frac{3}{4}$
40 Seers		1 Maund	=	40	6 14
20 Maunds		1 Candy	=	808	9 8

The Pergunnah Seer received from this place, as above stated, is 1 Dram heavier than the estimated weight by Rupees.

The measures for oil and sea samum, and the Long Measure, are the same as at HANSOOT, which see.

OMUTWARRA.

(In the Province of Malwa.)

Lat. 23° 30' N.—Lon. 74° 10' E.

WEIGHTS.

			lb.	oz.	dr.
81 Salim Shye Rupees	} make	1 Seer	=	1	15 3 $\frac{3}{4}$
3 $\frac{1}{2}$ Seers		1 Pusseree	=	6	13 5
2 Pusserees		1 Dhurree	=	13	10 10
4 Dhurrees		1 Maund..	=	54	10 8
8 Maunds		1 Maunee	=	437	4 0
100 Maunees		1 Maniasa	=	43725	0 0

For further particulars, see MALWA.

ONORE, or HONAWERA.

(A Town in Canara.)

Lat. 14° 18' N.—Lon. 74° 25' E.

The common currency here consists of Ikeri, Sultany, and Bahadre Pagodas; Surat and Madras Rupees, which are considered of equal value; Fanams, a small silver coin; and Dubs, a copper coin.

$$\begin{array}{l} 10 \text{ Dubs} \dots \} \\ 5\frac{1}{2} \text{ Fanams} \} \text{ make } \left\{ \begin{array}{l} 1 \text{ Fanam} \\ 1 \text{ Rupee} \\ 1 \text{ Pagoda} \end{array} \right. \\ 4 \text{ Rupees} \} \end{array}$$

WEIGHTS.

The Seer weight is the same as at Mangalore; it ought to weigh 24 Bombay Rupees: but these being scarce, in their stead Dubs are commonly used, and are somewhat heavier. The number of Seers contained in the Maund varies according to goods sold, viz.—

Common articles in the Bazar are	40 Seers, or	24.55 lb. Avoirdupois.
Pepper	42	26.91
Beetle-nut	45½	27.92
Dry cocoa-nut kernels.....	48	29.46
Jaggery	44	26.82

MEASURES.

There are two kinds of grain measures in use, one for the farmers, and one for the merchants; the basis of the former is the Hany, containing $87\frac{3}{4}$ Cubic Inches.

16 Hanies	} make	1 Colaga, which is equivalent to ..	0.816 Bushels.
20 Colagas		1 Moray, or Mudy, for common use	1.632
22½ Colagas		1 Moray for sale	1.813
15 Colagas		1 Moray for seed	1.224

The basis of the measure by which the merchants deal is the Sidi of $32\frac{1}{2}$ Cubic Inches.

6 Sidas ..	} make	1 Colaga =	0.907 Bushels.
20 Colagas		1 Moray =	1.814
30 Morays		1 Corge =	54.419

The Bazar Moray, and that of the farmers for sale ought to be the same, but they differ a little.

OUGEIN.

(In the Province of Malwa.)

Lat. 23° 11' N.—Lon. 75° 52' E.

For the monies, see *Assay Report*, No. 60, page 21.

WEIGHTS.

80 Ougein Rupees	} make	1 Seer ..	=	lb. oz. dr.
5 $\frac{3}{4}$ Seers		1 Dhurree	=	1 15 10
16 $\frac{7}{8}$ Seers		1 Maund	=	11 5 14
12 Maunds		1 Maunee	=	33 5 13
			=	400 5 12

For further particulars, see MALWA.

PAICAL.

(A Pergunnah near Surat.)

The Maund contains 48 Seers 8 Pice of Surat = 45 lb. 4 oz.
Avoirdupois.

See SURAT.

PALAMCO TAH.

(In the Southern Division of the Carnatic.)

Lat. 11° 26' N.—Lon. 79° 42' E.

GOLD AND SILVER WEIGHT.

The Seer used for weighing gold, silver, &c. is 4551 Gr. or
10 $\frac{3}{4}$ Oz. Avoirdupois; and therefore 38.453 such Seers make the
Maund of 25 lb.

There are also weights of 100 Cullengeys, with divisions and
subdivisions, down to the 32d part. 56 Cullengeys make the Seer.
1 Cullengey = 81 $\frac{1}{4}$ Grains Troy.

COMMERCIAL WEIGHTS.

The weight used by retail sellers for drugs and provisions is the eighth of a Toolam, which equals 1 lb. 9 oz. Avoirdupois; and thus, 2 Toolams make the Maund of 25 lb. 100 Pullums compose the Toolam, which is equal to $12\frac{1}{2}$ lb.

The sixteenth of a Toolam, used for weighing by wholesale, is equal to 1 lb. 3 oz., and thus 1,315 Toolam makes the Maund of 25 lb.

The quarter Puddy, used for weighing brass, copper, pewter, tutenag, &c. equals 1 lb. $3\frac{3}{4}$ oz., and hence 5.63 Puddies make the Maund.

The Puddy therefore contains 4 lb. 15 oz. and is divided into halves, quarters, &c.

The Seer used for weighing tape, rope, &c. answers to 1 lb. 13 oz., and 13.793 such Seers make the Maund of 25 lb.

GRAIN MEASURE.

The measure used at the bazar and by merchants for all kinds of grain answers to $1\frac{7}{16}$ Quart English, and 6 such measures make 1 Mercal = $1\frac{1}{6}$ Gallon nearly.

The Corn Measure used by the revenue and by the farmers answers to $1\frac{5}{64}$ Quart English, and 8 such measures make the Mercal, or $2\frac{5}{32}$ Gallons.

Both Mercals are divided into halves, quarters, &c.

LONG MEASURES.

The Gajum or measure used by cloth merchants, both here and at Trichinopoly, answers to $36\frac{1}{4}$ English Inches.

The Moora used by stone-masons is $29\frac{9}{16}$ such Inches, and that used by carpenters $32\frac{2}{3}$ Inches.

PALIMBANG.

*(In the Island of Sumatra.)*Lat. $2^{\circ} 48'$ S.—Lon. $104^{\circ} 50'$ E.

Accounts are kept in Rixdollars of 48 Stivers, as in Java: the Spanish Dollar is worth $1\frac{1}{4}$ Rixdollar; and therefore this Rix-dollar of account is worth 3s. 6d. sterling.

The currency of the country, and the only money allowed to be received at the king's treasury, is the Spanish Dollar; but there is also in general circulation a species of small base coin, called Petis, having a square hole in the middle, like the Chinese Cash. They are strung in parcels of 500 each, 16 of which are equivalent to a Spanish Dollar. The exchange between Rixdollars and Spanish Dollars is 5 of the former for 4 of the latter.

Gold and silver are weighed by the Catty of 10 Tales, or $22\frac{1}{2}$ Reals; the Catty weighs 19 oz. 15 dwt. 14 gr. English Troy.

The commercial weight is the Baly, which is divided into 10 Gantangs or 60 Catties, and equals 81 lb. 6 oz. Avoirdupois. The Copang contains 80 Balies.

The Goelack of pepper is $1\frac{1}{4}$ Catty, or 27 Ounces Avoirdupois; but the weight used by the Dutch East India Company for pepper is the Pecul, which answers to 133 lb. Avoirdupois.

PALLODA.

*(In the Collectorship of Ahmednuggur.)*Lat. $22^{\circ} 50'$ N.—Lon. $73^{\circ} 10'$ E.

The Seer weighs 78 Ankosee Rupees and $10\frac{1}{2}$ Massas, equal to 1 lb. 15 oz. 2 dr.

The Seer of Capacity weighs $103\frac{1}{2}$ Ankosee Rupees, and is divided and multiplied as follows, the Tank being equal to 248 Grains.

18 Tanks ..	}	make	1 Pao Seer =	lb.	oz.	dr.
4 Pao Seers			1 Seer =	0	10	3 $\frac{1}{4}$
2 Seers....			1 Adholee =	2	8	13
2 Adholees			1 Pylee.... =	5	1	10
16 Pylees ..			1 Maund .. =	10	3	4
20 Maunds			1 Candy .. =	163	4	0
				3265	0	0

For further particulars, see AHMEDNUGGUR.

PANDREE.

(A Pergunnah in the District of Calpee.)

The Seer = 2 lb. 11 oz. 12 dr.

The Long Measure = 40 $\frac{3}{4}$ English Inches.

For further particulars, see CALPEE.

PANWARREE.

(A Pergunnah in the District of Calpee.)

The Seer = 2 lb. 2 oz. 2 dr.

The measure for grain contains 2 Seers 13 Chittacks = 6 lb. 0 oz. 2 dr.

The Long Measure = 36 $\frac{3}{8}$ English Inches.

Note.—*The above standards have been received in London without any further specification.*

PARNAIR.

(A District within the Collectorship of Ahmednuggur.)

All the weights and measures here are the same as at Ahmednuggur, except the following:—

	lb.	oz.	dr.
The Seer weighs 76 $\frac{1}{2}$ Ankosee Rupees	1	14	2 $\frac{1}{2}$
The Seer of Capacity contains 95 Ankosee Rupees and 7 Massas..	2	5	2

For further particulars, see AHMEDNUGGUR.

PATNA.

*(A City in the Province of Bahar.)*Lat. $21^{\circ} 42'$ N.—Lon. $87^{\circ} 27'$ E.

100 Patna Rupees = 95 Sicca Rupees 11 Annas, and are therefore worth 1s. $11\frac{3}{4}d.$ each.

GOLDSMITHS' WEIGHT.

		Gr.
The Ruttee	=	$3\frac{1}{20}$
The Massa	=	$18\frac{1}{2}$
The Tolah	=	209

The above weights, and also the following, have been received without any specification of their divisions and multiples.

		lb.	oz.	dr.
The Seer of 45 Sicca Weight	=	1	2	9
48 ditto	=	1	3	12
72 ditto	=	1	13	$10\frac{1}{2}$
72 11 7	=	1	14	2
76 ditto	=	1	15	$4\frac{3}{4}$
80 ditto	=	2	0	$14\frac{1}{2}$
81 5	=	2	1	$6\frac{3}{4}$

Oil and all liquids are sold by the above Seers of 45, 76, and 80 Sicca Weight; and also by measures, standards of which have been transmitted to London, with the Seers, and have been found respectively to measure $32\frac{1}{2}$, 54.2, and 57.75 Cubic Inches.

LONG MEASURE.

	Eng. Inches.
The Cloth and Carpet Measure	= 33
The Broad Cloth	= $42\frac{1}{2}$

 PEGU.
*(In the Birman Empire.)*Lat. $17^{\circ} 4'$ N.—Lon. $96^{\circ} 12'$ E.

The trade is here mostly carried on by barter: gold and silver are not coined in the country, but exchanged as merchandise.

The Tical, a certain weight of silver which is sometimes used as a money of account, is divided into 16 Toques or Touch.

There is, however, a small coin, called Ganza, which is a mixture of copper, lead, and tin, and worth about $1\frac{1}{4}d.$ sterling; but the price varies according to the demand and supply. Gold, silver, pearls, spices, and other valuable articles, are generally paid for in this money.

Gold and silver are weighed by the Tical, and their fineness is expressed by dividing the weight into sixteen parts called Touch, answering to 100 Touch in China, or 10 Touch on the Malabar coast. The Tical weighs $4\frac{1}{2}$ Pagodas, or $237\frac{1}{3}$ English Grains.

The commercial weights are the Vis of 100 Ticals, or 1000 Moo, and the Candy of 150 Vis. From the above weight of the Tical, the Candy should weigh $508\frac{1}{2}$ lb.: the English, however, reckon it at 6 Maunds 28 Seers of the Bengal Factory, or 500 lb. Avoirdupois.

Rice is sold by a measure called a Basket, containing 16 Vis, or 54 lb. Avoirdupois.

PERSIA.

Accounts are kept in Tomans of 50 Abassis, 100 Mamoodis, 200 Shatrees or Chayés, 1000 Dinars-bisti, 2000 Kasbequis, or 10000 Dinars simple. The Toman and Dinar are imaginary monies.

Large payments are commonly made in silver; there are, however, some gold coins called Cherassi, which are generally struck for distribution at coronations, and are of different values. Thus the piece of Iman Rizi is worth about $4s. 2d.$ sterling; that of Aboul-Faiz about $12s. 3d.$; and that of Kouli Khan $£1. 10s. 6d.$ nearly.

The silver coins of Persia are, Haser Denaries, of 10 Mamoodis; Daezajies, of 5; Larins, of $2\frac{1}{2}$; Albaajers or Abassis, of 2; single Mamoodis; half Mamoodis or Chayés; and copper Casbequis, of 5 Dinars.

There are, besides the foregoing monies, others of recent coinage, which circulate chiefly on the shores of the Persian and Arabian Gulfs, particularly gold Tomans and silver Rupees, for which, see *Assay Report*, Nos. 8, 9, 82, 83, and 84, page 18, &c.

WEIGHTS.

Two sorts of weights are used in Persia, the Batman of Cherray, and the Batman of Tauris ; the former is exactly double the latter, and their divisions are the same, the Batman containing 6 Rattels, 300 Derhams, or 600 Miscals. The Batman of Cherray weighs 88771 English Grains, or 5751.692 Grammes ; and the Batman of Tauris half the above contents, or 6.34 lb. Avoirdupois.

The Derham, used for weighing gold and silver, equals 149 English Grains, or 9.79 Grammes.

Pearls are weighed by the Abas, which answers to 3.66 diamond Grains English, or 2.25 Troy Grains = .148 Decigramme.

CORN MEASURE.

An Artaba of corn contains 25 Capichas, 50 Chenicas, or 200 Sextarios ; and is generally computed to contain 2 Winchester Bushels.

LONG MEASURES.

Of the Guerze, there are two sorts: the Royal Guerze, also called Monkelsar, is $37\frac{1}{2}$ English Inches, and the common Guerze, which is two-thirds of the former, viz. 25 Inches.

Another measure is sometimes used, called Arish, which equals 38.27 English Inches.

ROAD MEASURE.

The Parasang, or Persian League, is the twentieth part of a Degree of the equator ; it should therefore equal 3 geographical Miles, or 3 Miles 3 Furlongs 25 Poles English.

For further particulars, see BASSORAH and GAMRON.

PERTABGHUR.

(A Town in Central India.)

Lat. 24° 2' N.—Lon. 74° 51' E.

For the Rupee, see *Assay Report*, No. 95, page 22.

COMMERCIAL MEASURES AND WEIGHTS.

			lb.	oz.	dr.
80 Salim Shye Rupees	} make	1 Seer .. =	1	14	13 $\frac{3}{4}$
5 Seers		1 Dhurree =	9	10	3 $\frac{1}{2}$
20 Seers		1 Maund =	38	8	14
12 Maunds		1 Maunee =	462	10	8

For further particulars, see MALWA.

 PHILIPPINE ISLANDS. *See* MAGINDANAO AND
MANILLA.

PONDICHERRY.

(Coromandel Coast.)

Lat. 11° 56' N.—Lon. 79° 54' E.

Accounts are kept here in Pagodas of 24 Fanams; and the Fanam is subdivided into 60 Cash.

The coins are gold Pagodas, and silver Rupees and Fanams, which have been mentioned under the article MADRAS; also copper Cash, and Dudus, a copper coin, 20 of which are reckoned to a Fanam.

Gold and silver are weighed by the Seer, Pagoda, Rupee, and Fanam. A Seer weighs 24 $\frac{3}{8}$ Rupees, 81 $\frac{1}{4}$ Pagodas, or 731 $\frac{1}{4}$ Fanams; a Rupee weight equals 30 Fanams, or 480 Nello; a Pagoda weight, 9 Fanams, or 144 Nello. Thus 3 Rupees are equal in weight to 10 Pagodas. The Seer = 4293 English Grains.

The commercial weight is the Candy of 20 Maunds, or 160 Vis. The Maund equals 25 lb. 14 oz. $5\frac{1}{2}$ dr. Avoirdupois.

Rice and all other sorts of Grain are sold by the Garce of 600 Mercals. 100 Mercals = 18 English Bushels nearly. The Garce therefore equals $13\frac{1}{2}$ English Quarters.

PRINCE OF WALES ISLAND, OR PULO PINANG.

(*Off the Western Coast of Malay.*)

Lat. $5^{\circ} 23'$ N.—Lon. 101° E.

Accounts were formerly kept by the Company's agents in Spanish Dollars of 20 Copangs and 100 Pice, while merchants generally kept their accounts in Dollars and Cents only; but in 1827 Sicca Rupees, Annas, and Pice were introduced as the currency of the island, and accounts are kept accordingly, as at Calcutta.

GOLDSMITHS' WEIGHT.

12 Sagas ..	} make	1 Mayam	=	52	Grains.
16 Mayams		1 Bongkal, or 2 Spanish Dollars	=	832	
20 Bongkals		1 Catty	=	16640	

A Catty of gold, it should be observed, is heavier than the common Catty, in the proportion of 105 to 78. At Achet, Siak, Malacca, and places on the east side of the Malay peninsula, the Bongkal and Catty weights are about 10 per cent. less than the above. There is also a Bongkal measure, which is in frequent use amongst Europeans and native traders to the eastward, and which is found to weigh very nearly 2 Dollars, or 832 Troy Grains.

COMMERCIAL WEIGHT.

			lb.	oz.	dr.	
		1 Tahl	0	0	23	nearly
16 Tahils	} make	1 Catty	1	6	13	
100 Catties		1 Malay Pikul	142	10	$10\frac{2}{3}$	
3 Pikuls (Malay)		1 Bhar	428	0	0	
40 Pikuls (Chinese)		1 Koyan	5333	0	0	

There are two kinds of Catties and Pikuls used in the bazar—the Malay and the Chinese. The Malay Catty weighs 24 Spanish Dollars; the Chinese, $22\frac{1}{2}$. Hence 15 Catties Malay = 16 Chinese. By the Malay or large Pikul of $142\frac{2}{3}$ lb. Avoirdupois, merchants purchase pepper, tin, &c. from the native vessels; but sell by the Chinese, or Bazar Pikul of $133\frac{1}{3}$ lb.

MEASURES OF CAPACITY.

			Cubic Inches.
4 Chupahs	} make	1 Gantang	= 271.65
800 Gantangs		1 Koyan	= 217320.

The Chupah is divided into halves and quarters.

There is a measure used here, as well as in most of the neighbouring countries, termed a Parra, which is nominally a measure of 10 Gantangs, but sometimes consists of 5, 15, or 20 Gantangs. It is by the Parra, the contents of which being previously settled, that rice, salt, and some other articles, are in general measured; and it is always by a measure of this description that betel-nut is purchased on the Pedir coast.

LONG MEASURE.

The Hasta or Cubit, which is divided into halves and quarters, equals 18 English Inches; and is used by the Malays and many other natives for measuring cloths; but the Chinese shopkeepers in the bazar make use of the English Yard.

LAND MEASURE.

			Eng. Yards.
4 Hastas	} make	1 Depa	= 2
2 Depas		1 Jumba	= 4
20 Jumbas		1 Orlong	= 80

Hence the Orlong or 80 Square Yards = 1 Acre 1 Rood 12 Perches English statute Measure.

QUILON.

(A City in Travancore.)

Lat. 8° 53' N.—Lon. 76° 37' E.

The comomn weight used here, also at Allepey, Trevandrum, and Kotar, is the Olunda, or Dutch Pound, which answers to 7660 English Grains, or 1 lb. 1 oz. 8 dr. Avoirdupois.*

		Eng. Grains.
20 Munjandies	} make	1 Kullanjee = 77.86
13 Kullanjees		1 Pollum .. = 1012.18
98 $\frac{3}{8}$ Kullanjees		1 Olunda .. = 1 1 8 Avoir.
25 Pounds or Olundas		1 Maund .. = 27 5 8
20 Maunds		1 Candy .. = 546 14 0

The above Maund of 25 lb. Dutch is used for metals, spices, and sugars, but for other articles the Maund of 30 lb. is employed.

The Kotar of 14 lb. is used for weighing articles for the palace at Trevandrum; the Tricoor Toolam of 16 lb., and the Toodoovalah Toolam of 18 lb., also the Toolam of 20 lb. for dammer, wax, and other light goods.

In the district south of Quilon to Tavallay, a Five Pollum weight is used for weighing cotton, thread, tamarinds, jaggery, &c. which weight answers to 5848.3 Grains, and is thus divided:—

		lb.	oz.	dr.
20 Munjandees	} make	1 Kullanjee	=	0 0 2.85
15 Kullanjees		1 Pollum	=	0 2 10.77
75 Kullanjees		5 Pollums Weight	=	0 13 5.86
100 Pollums ..		1 Toolam	=	16 11 5.6

The following are the weights by which spices only are weighed, in which 5 Pollum weight answers to 5457 Grains.

		lb.	oz.	dr.
20 Munjandees	} make	1 Kullanjee	=	0 0 2.8
14 Kullanjees		1 Pollum	=	0 2 7.9
70 Kullanjees		5 Pollums Weight	=	0 12 7.5
100 Pollums ..		1 Toolam	=	15 9 7.3

* This ancient Dutch Pound, which is used in different parts of India, is found to be 1 $\frac{1}{4}$ Dram heavier than the actual Standard of Holland.

RADNAGORE.

*(A Station in Bengal.)*Lat. $22^{\circ} 50'$ N.—Lon. $90^{\circ} 20'$ E.

WEIGHTS.

The Seer of 62 Sicca Weight, used in the Bazar = 1 lb. 9 oz. $7\frac{3}{4}$ dr.

The Seer of 64 Sicca Weight, used for sugar and jaggery = 1 lb. 10 oz. $3\frac{1}{4}$ dr.

The Seer of 80 Sicca Weight, used for ghee = 2 lb. 0 oz. $14\frac{3}{4}$ dr.

The above Seers have been found to differ from their estimated weight in Rupees, as follows :—

The first, $\frac{1}{3}$ Dram heavier ; the second, $\frac{3}{4}$ Dram lighter ; and the third, $1\frac{1}{4}$ Dram heavier.

MEASURES OF CAPACITY.

The Baugee, by which Paddy is sold, weighs 5 Seers of 62 Sicca Weight, which is, however, subject to variation. The Baugee for rice weighs 6 Seers of 62 Sicca Weight, which varies according to the season.

		Cub. Inches.
The Seer for oil of 62 Sicca Weight	=	56
Ditto 80 Ditto	=	60

The principal long measure is the Haut of 18 English Inches.

RAHORY.

(In the Collectorship of Ahmednuggur.)

The Seer of capacity weighs $115\frac{1}{2}$ Ankosee Rupees = 2 lb. 13 oz. $8\frac{1}{2}$ dr. ; and the Seer of weight = 77 Ankosee Rupees = 1 lb. 14 oz. $5\frac{3}{4}$ dr.

The other standards are the same as at Ahmednuggur, which see.

RANGOON.

(*A Seaport in the Birman Empire.*)

Lat. $16^{\circ} 47' N.$ —Lon. $96^{\circ} 9' E.$

The Birmans or Burmese keep their accounts decimally, like the Chinese, and have no coins; silver bullion and lead being the chief currency of the country.

The most general piece of silver in circulation is the Tical, which weighs 10 dwt. 10 gr., and is divided into 4 Maths, 8 Moos, or 16 Tubbees. The Vis is composed of 100 Ticals.

The quantity of alloy in the silver varies in different parts of the empire. At Rangoon it is computed to be 25 per cent.

WEIGHTS.

The weights are the Moo, Tual, Vis, and Candy; 100 Moos making 1 Tual; 100 Tuals 1 Vis; and 150 Vis 1 Candy. The Vis is considered equal to 3 lb. 5 oz. $5\frac{1}{3}$ dr., and the Candy to 500 lb. Avoirdupois.

Rice is sold by a measure called Basket: the weight of which is 16 Vis.

LONG MEASURE.

The measures of length are the Paulgaut, or Inch, 18 of which compose the Taim, or Cubit. The Soundaung, or Royal Cubit, is equal to 22 Inches.

The Dha, or Bamboo, consists of 7 Royal Cubits; 1000 Dhas make 1 Dain, or Birman League, equal to 2 English Miles 2 Furlongs: the League is also subdivided into tenths.

The above account of the monies, weights, and measures of the Burmese has been extracted from *Milburn's Oriental Commerce*;

and the following article, which is more comprehensive, is taken from *Crawfurd's Embassy to Ava*, recently published.

MONIES, WEIGHTS, AND MEASURES OF THE BIRMAN EMPIRE.

The Burmese keep their accounts decimally, like the Chinese, and mint no coin. Gold and silver bullion are their chief circulating medium, and pieces of lead are used in small payments. The precious metals are estimated by weight, and the proportion of gold to silver is generally computed at 1 to 17; but silver is considered the standard of value, and the quantity of alloy in it varies considerably.

GOLD AND SILVER WEIGHT.

2 Tubbees	} make	1 Moo
2 Moos ..		1 Math
4 Maths..		1 Tical
100 Ticals..		1 Vis.

COMMERCIAL WEIGHT.

2 Small Rives	} make	1 Large Rives
4 Large Rives		1 Bai
2 Bais		1 Mu
2 Mus		1 Math
4 Maths		1 Kiat or Tical = 251 Grains
100 Kiats		1 Paiktha or Vis = 3.65 lb. Avoirdupois.

MEASURES OF CAPACITY.

2 Lamytts	} make	1 Lamé
2 Lamés		1 Sale
4 Sales ..		1 Pye
2 Pyes ..		1 Sarot
2 Sarots		1 Sait
4 Sait ..		1 Ten or Basket.

The Basket equals 16 Vis of Rice, or 58.25 lb. Avoirdupois. It is commonly reckoned at 56 lb.

All grain, pulse, certain fruits, salt, and lime are bought and sold by measure, and most other commodities by weight.

LONG MEASURE.

10	Cha'k'hyis, or Hairbreadths	}	make	1	N'hon, or Sesamum Seed	
6	N'hons			1	Moyau	
4	Moyaus			1	T'hit (finger-breadth)	
8	T'hits			1	Maik (hand)	
1 $\frac{1}{2}$	Maik			1	T'hwa (span)	
2	T'hwass			1	Taong (Cubit)	= 19 $\frac{1}{10}$ Eng. In.
4	Taongs			1	Lan (Fathom)	
7	Taongs			1	Ta (Bamboo)	
20	Tas			1	Ok 'tha' fra	
20	Ok 'tha' fras			1	Kosa	
4	Kosas	}		1	Gawot	
40	Gawots			1	Ujana	Eng. Miles. Yds.
7000	Taongs			1	Taing (Mile)	= 2 293 $\frac{2}{3}$

* * Mr. CRAWFURD also gives an account of different Eras used by the Burmese, which will be duly noticed in "The Oriental Measures of Time."*

ROOMBHAREE.

(A District within the Collectorship of Ahmednuggur.)

The weights and measures here are the same as at Ahmednuggur, except the following:—

The Seer weighs 74 Ankosee Rupees = 1 lb. 13 oz. 2 $\frac{3}{4}$ dr.

The Seer of Capacity weighs 102 Ankosee Rupees, and is divided and multiplied as follow:—

			lb.	oz.	dr.
18 Tanks...	}	make	1	Pao Seer	= 0 10 0 $\frac{3}{4}$
4 Pao Seers			1	Seer	= 2 8 3 $\frac{1}{2}$
2 Seers....			1	Adholee	= 5 0 6 $\frac{3}{4}$
2 Adholees			1	Pylee....	= 10 0 13 $\frac{1}{2}$
16 Pylees ..			1	Maund ..	= 160 13 8
20 Maunds			1	Candy ..	= 3217 9 0

* It may be observed here that the coins of the East India Company, particularly the Sicca Rupee and its divisions, have been recently introduced into the ceded parts of the Burmese Empire, namely, Amhurst, Arracan, Assam, Ava, Cheduba, Mergui, Ramree, Rangoon, Sandoway, Tavoy, Ye, &c. in which also British weights and measures are occasionally adopted.

RUNGYPORE.

(A Town in the Province of Bengal.)

Lat. 25° 47' S.—Lon. 89° 5' E.

The standards received from this factory differ from their estimated weight in Rupees as follows :—

		Weight by Rupees.			Real Weight.		
		lb.	oz.	dr.	lb.	oz.	dr.
Seer of 60	Sicca Weight	=	1	8 10	1	8	12
65	Ditto	=	1	10 11	1	10	10.6
72	11 7	=	1	13 13.8	1	13	10.7
73	Ditto	=	1	13 15.6	1	14	1.7
80	Ditto	=	2	0 13.6	2	1	1
90	Ditto	=	2	4 15.5	2	5	1
160	Ditto	=	4	1 11.2	4	2	4

The Guz for measuring Baftae cloths = 63 English Inches.

RUTLAM.

(A Town in the Province of Malwa.)

Lat. 23° 19' N.—Lon. 75° 5' E.

WEIGHTS.

		lb. oz. dr.		
84 Salim Shye Rupees	} make	1 Seer ..	=	2 0 6
5 Seers		1 Dhurree	=	10 1 14
20 Seers		1 Maund	=	40 7 8
12 Maunds		1 Maunee	=	485 10 0

The above are the weights by which goods are bought, but they are sold by the Seer of 80 Rupees = 1 lb. 14 oz. 13 $\frac{3}{4}$ dr.

Spices, betel, &c. are sold by a Seer of 79 Rupees Weight = 1 lb. 14 oz. 7 $\frac{1}{2}$ dr.

ST. HELENA.

(An Island in the Southern Atlantic.)

Lat. 15° 55' S.—Lon. 5° 43' W.

Accounts are kept here in Pounds, Shillings, and Pence sterling ; but coins of various denominations are current, especially those of the East Indies and Spain.

Porto Novo Pagodas pass at 7s. 6d. ; Spanish Dollars at 4s. 6d. ; but English Sovereigns and Bank Notes are generally at a premium, especially in exchanging them for East India coins.

English weights and measures are chiefly used here.

SALANGORE.

(On the Western Coast of Malay.)

Lat. 3° 20' N.—Lon. 101° 18' E.

Imaginary Dollars are the money of account here, which are computed as follows:—8 Tompongs of tin, each of the weight of 8 Catties, make 1 Dollar ; 30 Dollars, or 240 Catties, make 1 Bahar, which weighs 324 lb. Avoirdupois. The Malacca Bahar of 300 Catties, or 405 lb. Avoirdupois, is also used.

For further particulars, see MALACCA.

SANKERRYDROOG.

(In the Southern Division of the Carnatic.)

Lat. 11° 30' N.—Lon. 78° 10' E.

The Seer for provisions, drugs, &c. weighs $9\frac{3}{4}$ oz. Avoirdupois, and 41.256 such Seers = the Maund of 25 lb. The Seer contains 8 Pullums, which is divided into halves, quarters, &c.

	English Quarts.
The measure used in the Bazar for grain and oil	= 0 $1\frac{3}{4}$
That used by farmers for the same articles	 = 0 $0\frac{7}{8}$
4 such measures.....	= 1 Vallum = 0 $3\frac{1}{2}$

SANTIPORE.

(In the Province of Bengal.)

Lat. 26° N.—Lon. 80° 50' E.

The standards received from this factory differ from their estimated weight in Rupees as follow:—

		Weight by Rupees.			Real Weight.		
		lb.	oz.	dr.	lb.	oz.	dr.
Seer of 60 Sicca Weight	=	1	8	10	1	8	11.8
72 11 7	=	1	13	13.8	1	14	0.8
80 Ditto	=	2	0	13.6	2	1	0.4
82 Ditto	=	2	1	10.7	2	1	11.4
84 Ditto	=	2	2	7.9	2	2	5.4
96 Ditto	=	2	7	6.7	2	7	3

EXPORT WAREHOUSE WEIGHTS.

	lb.	oz.	dr.
Seer, Factory Weight	=	1	13 7.8
Seer, Bazar Weight..	=	2	0 14.4
Seer of 82 10	=	2	1 15

IMPORT WAREHOUSE WEIGHTS.

	lb.	oz.	dr.
Factory Seer	=	1	13 13.7
Bazar Seer..	=	2	0 13.6

MEASURE OF CAPACITY.

The Seer of 80 Sicca Weight of water is found to contain 57.75 Cubic Inches = 1 Quart Wine Measure.

LONG MEASURE.

Two standards of length have been received, one 18 and the other 36 Inches.

SERINGAPATAM.

(Capital of the Mysore.)

Lat. 12° 25' N.—Lon. 76° 45' E.

Accounts are kept in Cantaria Pagodas of 10 Fanams, and the Fanam is divided into 16 Cash.

The Coins are Pagodas worth 13 Fanams each, coined by TIPPoo SULTAN, by HYDER ALLY, and by the RAJAH OF MYSORE. They are generally called Sultany Pagodas, 7 of which equal 26 Sultany or Rajah Rupees.

There are also copper pieces called Dubs, 260 of which, more or less, are valued at 1 Pagoda.

There are besides gold Mohurs worth 4 Pagodas, which weigh each 212 Grains Troy, and the fineness is 20 Carats $2\frac{1}{3}$ Grains. The Mohur is therefore worth £1. 12s. $2\frac{1}{4}$ d. sterling, with halves and quarters in proportion.

The Fanam weighs 6 Grains, and is about 14 Carats fine; it is therefore worth $7\frac{1}{2}$ d. sterling.

The present Sultany Rupee weighs 177 Grains, and is 11 oz. $5\frac{1}{2}$ dwt. fine; it is therefore worth $23\frac{1}{4}$ d. sterling.

WEIGHTS AND MEASURES.

The following system of Metrology was ordered by TIPPoo SULTAN, and generally adopted throughout his dominions.

The Cutcha, or smaller Seer, is the basis of the weights, and is equal to 24 Sultany or Mysore Rupees; it answers therefore to 4248 Troy Grains, or 9 oz. $11\frac{1}{3}$ dr. Avoirdupois, on which Seer is founded the following set of weights:—

		lb.	oz.	dr.
	1 Pollum =	0	1	$3\frac{3}{8}$
8 Pollums }	1 Cutcha Seer =	0	9	$11\frac{1}{3}$
5 Cutcha Seers }	1 Panch Seer =	3	0	9
8 Panch Seers }	1 Maund =	24	4	8
20 Maunds }	1 Candy =	485	10	0

By the above are weighed sugar, jaggery, turmeric, pepper, spices, ghee, oil, &c.

The Pucka, or larger Seer, is formed by mixing equal quantities of 9 sorts of grain*, and of this mixture the weight of 84 Sultany Rupees is taken and put into a vessel, which will exactly contain that quantity when heaped. This serves as the standard from which the following Dry Measure is established.

16 Chattacks	} make	1 Sultany Pucka Seer	=	lb.	oz.	dr.
16 Seers		1 Colagah	=	2	1	15 $\frac{3}{4}$
20 Colagahs		1 Candy	=	33	15	12
				679	11	0

By this Measure grain of all kinds is sold, and also milk.

Cloth and timber are usually measured by the Cubit of 18 English Inches.

The Native Long Measure is the Gujah, which answers to $38\frac{1}{2}$ English Inches. 6000 Gujahs make 1 Hardary, which equals 3 Miles $5\frac{1}{6}$ Furlongs; and 4 Hardaries make 1 Gavada, or Day's Journey; for itinerary distances here, as in many other places, are sometimes estimated by the time required, at an ordinary rate of travelling, to go a given distance.

SIAM.

(On the further Peninsula.)

Lat. $14^{\circ} 5' N.$ —Lon. $100^{\circ} 25' E.$

Accounts are kept here in Catties, Tales, Ticals or Tuals, Miams, Fouangs, and Cowries, a sort of shell. The Catty is 20 Tales; the Tale, 4 Ticals, 16 Miams, or 32 Fouangs; the Fouang is 800 Cowries.

10 Miams are accounted equal to 1 Chinese Tale; so that 5 Tales of Siam = 8 Chinese Tales.

The coins are gold Ticals, which pass for 10 silver Ticals: silver Ticals, Miams, Fouangs, and Sompais; the latter being the fourth part of a Fouang. The silver Tical weighs $225\frac{1}{2}$ English Grains,

* The nine sorts of grain here adopted are rice, wheat, weodso, tovary, hessava, avary, cawlay, and elins; varying from those stated in page 45.

and is from 11 oz. 4 dwt. to 11 oz. 12 dwt. fine ; thus it is worth from 29*d.* to 30*d.* sterling ; but these coins are often adulterated. 2 Ticals pass commonly for 1 Spanish Dollar, and $2\frac{1}{2}$ Ticals for 1 Dutch Ducatoon.

The fineness of gold and silver is expressed, as in China, by dividing the weight into 100 parts, called Toques or Touch.

Gold and silver are weighed by the Tical, which equals 9 dwt. 10 gr. English.

The Pecul, the weight for heavy goods, is 50 Catties ; the Catty, 20 Tales, or 80 Ticals. The Siam Pecul weighs 129 lb. Avoirdupois ; and the Catty, 41 oz. $4\frac{1}{2}$ dr. Avoirdupois.

The largest measure for corn is the Cohi, of 40 Sestes ; the Seste contains 40 Sats, and weighs 100 Catties, or 258 lb. Avoirdupois.

Cottons and other goods of the kind are commonly sold by the piece. The long measures are :—2 Soks make 1 Ken ; 2 Kens 1 Vouah ; 20 Vouahs 1 Sen. The Vouah is 1 Inch shorter than the French Toise ; it measures, therefore, 6 Feet $3\frac{3}{4}$ Inches English. 100 Sens, or 2000 Vouahs, make 1 League, called Roeneng, which is 4204 English Yards, or $2\frac{2}{5}$ Miles nearly.

SINGAPORE.

(An Island S. E. of Malay.)

Lat. $1^{\circ} 30' N.$ —Lon. $104^{\circ} 2' E.$

The currency of Singapore was formerly Spanish Dollars, divided into 100 Cents ; the Cents being represented by the copper money of the Prince of Wales Island ; but of late the currency of Sicca Rupees, Annas, and Pice, as at Calcutta, has been introduced.

Gold is sold by the Buncal, which weighs 2 Dollars, or 832 Grains. Heavy goods are weighed as in China, by the Pecul of 100 Catties and 1600 Tales.

Salt, rice, and sago are sold by the Koyan of 40 Peculs.

SINKELL.

*(In the Island of Sumatra.)*Lat. $2^{\circ} 10'$ N.—Lon. $97^{\circ} 38'$ E.

Spanish Dollars are the principal currency here, but accounts are kept in Tales, Soocoos, and Satallies; the Tale being divided into 4 Soocoos, or 16 Satallies. 4 Spanish Dollars are reckoned to the Tale.

Benzoin is sold by the Tompong or Cake, which ought to weigh 20 Catties, each Catty 56 oz. Avoirdupois, and for camphor 56 oz. Troy weight. The Chinese Pecul is generally used.

SOOLOO.

*(One of the Sunda Islands.)*Lat. $6^{\circ} 1'$ N.—Lon. $121^{\circ} 12'$ E.

There is no coin at Sooloo; accounts are sometimes reckoned by Spanish money, but commonly by the Sanampoory, Cangan, and Cowsoong. The first is a term only, the second is a coarse Chinese cotton cloth, 6 Fathoms long, which is reckoned equivalent to a Spanish Dollar. The Cowsoong is a piece of nankeen of 4 Fathoms long. Each of these is reckoned at 4 Sanampoories. In small payments, they make use of paddy, that is, rice in the husk.

The Sooloo weights are similar to those of China, but differently denominated.

The Pecul is divided into 2 Lacksas, 20 Booboots, or 100 Catties. The Catty is divided into 16 Tales, 160 Amas, or 1600 Choo-socks.

The use of paddy as a currency has introduced the custom of measuring instead of weighing grain and some other commodities, as Cowries, &c.

The smallest grain measure is a half cocoa-nut-shell, called a Panching.

8 Panchings	}	make	{	1 Gantang
10 Gantangs				1 Raga
2½ Ragas . . .				1 Pecul.

The Gantang of rice is reckoned to weigh 4 Catties; according to which, 2½ Ragas make 1 China Pecul of 133½ lb. Avoirdupois.

The measure for cloth is the Fathom, but the Chinese Coid is in common use.

SOONAMOOKY.

(*In the Province of Bengal.*)

Lat. 23° 27' N.—Lon. 87° 27' E.

Two Seers have been received from this Factory, viz. one of 58 10 Sicca Weight = 1 lb. 8 oz. 0½ dr.; and the other of 60 Sicca Weight = 1 lb. 8 oz. 10 dr.

POORSEER MEASURES.

	lb.	oz.	dr.
Seer of 72 Sicca Weight	= 1	13	9½
73 4½	= 1	14	1½
75	= 1	14	12¾
82 10	= 2	1	14¾

LONG MEASURES.

	Eng. Inches.
The Corah of the native merchants	= 52.4
for unbleached linen.....	= 41.8
for bleached ditto	= 41
The Long Measure used at the Factory..	= 52.4
for unbleached linen	= 43.4
for bleached ditto ..	= 42.6

SUCCADANA.

(*In the Island of Borneo.*)

Lat. 1° 16' S.—Lon. 109° 18' E.

Spanish Dollars are the only coin in circulation in the trade with

Europeans, but accounts among the natives are kept in Tales and Mace, as in China.

Gold, diamonds, bezoar, and other valuable articles, are weighed by the Tale, which is divided into 4 Pahaws, or 16 Mace; and the Mace into 4 Copangs, or 8 Busucks. Heavy goods are mostly weighed by English weights, and then turned into Chinese Peculs.

SUMATRA. *See* ACHEEN, FORT MARLBOROUGH, NATAL, PALIMBANG, SINKELL, AND TAPPANOOLY.

SUEZ.

(At the Northern extremity of the Red Sea.)

Lat. 30° N.—Lon. 32° 28' E.

The current coins here are Burbers, Medines, Sequins, and Spanish Dollars. 12 Burbers make 1 Medine. The Sequin is of two descriptions, viz. the Fundunclee Sequin, which passes for 146 Medines, and the Zermabob, for 110 Medines. The proportion of these monies to the Spanish Dollar varies according to circumstances.

GOLD AND SILVER WEIGHT.

			Grains Troy.
4 Grains	} make	1 Kellat	= 3.79
16 Kellats		1 Dram..	= 60.76
1½ Dram		1 Metigal	= 91.14

COMMERCIAL WEIGHTS.

			lb.	oz.	Avoir.
144 Drams	} make	1 Rottolo	= 1	4	
400 Drams		1 Oke ..	= 5	8½	

The Quintal varies from 110 to 150 Rottolos, according to the kind of goods to be weighed.

SURAT.

*(A City in the Province of Gujrat.)*Lat. $21^{\circ} 4' N.$ —Lon. $72^{\circ} 51' E.$

The monies of Surat, which were formerly subject to much uncertainty, have been recently assimilated to those of Bombay, which see.

The weights and measures of this city are variously represented by different authors. The following statements have been received at the India House in London, from the Commercial Resident's Office in Surat, in obedience to the circular order of the Court of Directors issued in 1820.

GOLD AND SILVER WEIGHT.

			Gr.
		1 Ruttee =	1.95
3 Ruttees	} make	1 Val .. =	5.85
8 Ruttees		1 Massa =	15.6
12 Massas		1 Tola =	187.2
35 Tolas		1 Seer .. =	6552 = 15 oz. Avoir.

The Seer also equals $36\frac{2}{3}$ Rupees, each 179 Grains, and therefore answers to 15 oz. Avoirdupois. It is likewise composed of 20 Great Pice, or 30 Small Pice, called Old and New Pice.

COMMERCIAL WEIGHT.

			lb.	oz.
		1 Seer .. =	0	15
40 Seers ..	} make	1 Maund =	37	8
20 Maunds		1 Candy =	750	0

From the above proportions the small and the large Harra of 7 and 21 Maunds may be computed. Also, the Maunee of 12 Maunds, and its double, the Bhaur of 24 Maunds.

It is, however, to be observed, that the number of Seers in a Maund differs according to the nature of the articles to be weighed. Thus, for merchandise in general, and all kinds of grain, 40 Seers are reckoned, and for spirituous liquors and oil 42; other articles vary from 40 to 46, but in all cases 20 Maunds make the Candy.

LONG MEASURE.

The Guz used by builders equals $27\frac{2}{3}$ English Inches, and by cloth merchants 24 Inches. In both cases it is divided into 24 equal parts. But timber merchants divide it into 20 Vussas, or 400 Viswassees, and this Guz equals $27\frac{1}{6}$ English Inches. Each of these measures is divided into halves, quarters, &c.

* * The despatch which contains the foregoing statements concludes as follows :—

“ With respect to dry or liquid measure, it is necessary to remark, that there are none in actual use at this place ; the models of Seers of Capacity now sent, which are merely nominal, have been constructed on the principle of their solid contents being precisely equal to a Seer in weight of the different articles for which the measures are destined ; and hence such measures must vary with the specific gravity of the articles.”

☞ The above observation will apply to all the measures of capacity transmitted from India to London at the above period ; and, therefore, the chief use to be made of such is to find their contents in Cubic Inches, and to reduce them to the English standard measure, according to the rule in page 34 of this work.

TAPPANOOLY.

(*In the Island of Sumatra.*)

Lat. $1^{\circ} 48' N.$ —Lon. $98^{\circ} 36' E.$

Accounts are generally kept in Dollars of 24 Fanams, or 400 Keppings. Spanish Dollars are the principal coin used in foreign trade ; but among the natives, the value of goods is estimated by tompongs, or cakes of benjamin, and sometimes by buffaloes ; also by brass wire, beads, and salt.

English weights and measures, as well as those of China, are used here.

TELLICHERRY.

(On the Malabar Coast.)

Lat. 11° 44' N.—Lon. 73° 32' E.

Accounts are kept in Rupees, Quarters, and Reas, as at Bombay.

The coins current here are Pagodas, Rupees, Fanams, Pice, and Tars. There are two kinds of Fanams; the one is a small gold coin, with a considerable alloy of silver and copper; the other a silver coin; the Pice and Tar are copper, coined in England.

$$\left. \begin{array}{l} 2 \text{ Tars} \dots \\ 10 \text{ Pice} \dots \\ 5 \text{ Fanams} \end{array} \right\} \text{ make } \left\{ \begin{array}{l} 1 \text{ Pice} = 80 \text{ Reas} \\ 1 \text{ Fanam} \\ 1 \text{ Bombay Rupee.} \end{array} \right.$$

WEIGHTS.

			lb.	oz.	dr.
10 Surat Rupees	} make	1 Pollam	=	0	4 1 $\frac{1}{3}$
2 Pollams		1 Seer	=	0	8 2 $\frac{2}{3}$
2 Seers		1 Pound	=	1	0 5 $\frac{1}{2}$
32 Pounds		1 Maund	=	32	11 0
20 Maunds		1 Candy	=	653	12 0

MEASURES.

The long measures are the Covid and the Guz; the former is 18 English Inches, and the latter 28 $\frac{2}{5}$ Inches.

TERNATE.

(One of the Molucca Islands.)

Lat. 0° 48' N.—Lon. 127° 13' E.

Accounts are kept in Rixdollars of 48 Stivers, equal to about 3s. 4d., and in Spanish Dollars. Ducatoons and Crowns are met with; 80 Ducatoons exchange for 100 Spanish Dollars, and 102 Crowns for the same.

WEIGHTS.

Gold and silver are weighed by the Mark Dutch Troy, divided into 9 Reals. The Real weighs 422 Grains English Troy weight.

The Bamboo of rice weighs $1\frac{1}{2}$ lb. Dutch Troy, or 1 lb. 10 oz. Avoirdupois. The Pecul contains 100 Catties, which is 120 lb. Dutch Troy, or 130 lb. 3 oz. 8.32 dr. Avoirdupois. The Barotti weighs 11 lb. 15 oz., and the Kaban $100\frac{1}{3}$ lb. Avoirdupois.

TONQUIN. *See CACHAO.*

TRANGANIA.

(*On the further Peninsula.*)

Lat. $5^{\circ} 21' N.$ —Lon. $103^{\circ} 4' E.$

The coins here are Mace, a gold coin, 16 of which are worth 1 Tale in gold dust. Spanish Dollars are very common. The inferior coins are Cossang and Patties; 400 Patties = 1 Cossang; 4 Cossang = 1 Mace; 16 Mace = 1 Tale.

The common weight is the Pecul, which is said to be heavier than that of China, but its exact contents have not been ascertained.

TRANQUEBAR.

(*Coromandel Coast.*)

Lat. $11^{\circ} 1' N.$ —Lon. $79^{\circ} 55' E.$

In this Danish settlement, accounts are kept in Rixdollars of 12 Fanams, and also in Rupees of 8 Fanams. The Fanam is divided into 80 Cash.

The Rixdollar is an imaginary coin, and is constantly reckoned 18 per cent. below the Danish current Rixdollar; it is therefore worth $37\frac{3}{4}d.$ sterling.

The coins are silver Rupees, double and single Fanams, and copper Dudus or Cash.

The coinage of Rupees is here so regulated, that 1302 of them are worth 600 old Spanish Dollars, weighing 43 lb. 7 oz. 2 dwt. Troy. The value of the Tranquebar Rupee is therefore $24\frac{3}{4}d.$ sterling.

Star Pagodas are worth 34 Fanams, more or less; and Spanish Dollars from 19 to 21 Fanams.

The Maund weighs 68 lb. Danish, or $74\frac{4}{5}$ lb. Avoirdupois.

TRAVANCORE.

(*A Province in the S. W. of Southern India.*)

The Town of Travancore Lat. $8^{\circ} 30'$ N.—Lon. $77^{\circ} 12'$ E.

WEIGHTS.

The Pootoor, Pound, or Rautul, by which the Circar receives pepper from the inhabitants, weighs 6972 Troy Grains, and is thus divided:—

20 Munjandies	} make	1 Kullanjee = 78 Gr.
$89\frac{1}{4}$ Kullanjees		lb. oz. dr.
20 Pounds		1 Pootoor = 0 15 15
20 Toolams		1 Toolam = 19 14 11
30 Toolams or 600 lb.		1 Bauram = 398 5 12
		1 Candy .. = 597 8 10

The Rautul or Pound, by which the Circar pepper is sold, equals $7007\frac{1}{2}$ Troy Grains, and is divided as follows:—

20 Munjandies	} make	1 Kullanjee .. = 78 Gr.
$89\frac{31}{32}$ Kullanjees		lb. oz. dr.
25 Pounds ..		1 Rautul or lb. = 1 0 $0\frac{1}{4}$
20 Maunds ..		1 Maund = 25 0 $6\frac{1}{2}$
		1 Candy..... = 500 8 2

MEASURES OF CAPACITY.

The Measure used for grain of every description is the Parah, which is composed of 10 Agarasaulay Dungallys, and contains 2 English Quarts nearly.

The measure for oil, ghee, &c. is as follows :—

$$\begin{array}{l} 11\frac{1}{4} \text{ Dungallys} \\ 30 \text{ Choradanys} \end{array} \left. \vphantom{\begin{array}{l} 11\frac{1}{4} \\ 30 \end{array}} \right\} \text{ make } \left\{ \begin{array}{l} 1 \text{ Choradany} = 1\frac{3}{32} \text{ Quart} \\ 1 \text{ Candy} \dots = 8\frac{13}{64} \text{ Gall.} \end{array} \right.$$

TIMBER MEASURE.

Timber, both round and square, is measured by the Kole of 24 Borrels or Malabar Inches, answering to $29\frac{1}{6}$ English Inches, or more accurately 29.065, and hence 13824 Cubic Borrels make 1 Candy or Cubic Kole, measuring $24553\frac{1}{3}$ Cubic Inches, or 14.209 Cubic Feet English.

The Tooda, by which plank taldoms, &c. are measured, is 576 Borrels square, and 2 Borrels thick, and therefore contains 1152 Cubic Borrels, answering to 2046 Cubic Inches, or 1.184 Cubic Foot English.

TREVANDRUM. *See* QUILON.

TRICHINOPOLY.

(In the Southern Division of the Carnatic.)

Lat. $10^{\circ} 50'$ N.—Lon. $78^{\circ} 50'$ E.

WEIGHTS.

The weight used for medicine and all Bazar articles of provisions in retail trade is the Pucka Seer, which is equal to 13342 English Grains, and is thus divided :—

			lb.	oz.	dr.
9	Star Pagodas	} make	1	Pullam.....	= 0 1 2
27	Pullams		1	Pucka Seer	= 1 14 8
2	Pucka Seers		1	Quarter Toolam	= 3 13 0
13.114	Pucka Seers		1	Maund	= 25 0 0

The Seer used for weighing the above articles by wholesale is composed of 27 Pullams of 10 Star Pagodas each, and therefore equals 2 lb. $1\frac{3}{4}$ oz.: hence 11.387 such Seers are equal to 1 Maund of 25 lb. The above Seers are divided into halves, quarters, &c.

The Vis is equal to 3 lb. and therefore $8\frac{1}{3}$ of such weights make the Maund.

The Seer used for weighing copper, brass, lead, pewter, tin, tutenag, &c. but not iron, whether by wholesale or retail, is equal to 4167.7 Grains Troy, or 9 oz. $8\frac{1}{2}$ dr., and therefore 41.987 such Seers are equal to 1 Maund.

The Madras weights are used at the Custom House of this station, and also occasionally by merchants.

MEASURES.

The measure used for all kinds of grain is equal to $1\frac{7}{8}$ Quart, and is subdivided into halves, quarters, and eighths. Four of these measures make the Mercal, which answers to $1\frac{1}{8}$ Gallon.

It is to be observed, that grain is never sold by weight at Trichinopoly.

The measure for oil is equal to $\frac{3}{4}$ of an English Quart, and is divided as above. For wholesale, a brass vessel is used, the contents of which are ascertained by this measure.

The Long Measure is the Moora. That used by stone-cutters equals $33\frac{1}{8}$ English Inches, and that employed by carpenters $34\frac{1}{5}$ ditto.

The Coloo used by farmers in measuring land contains $21\frac{1}{6}$ English Feet.

TRINCOMALEE. *See* COLOMBO.

VELLORE. *See* ARCOT.

VISAGAPATAM. *See* MASULIPATAM.

WALLAHJABAD. *See* ARCOT.

The *V* is equal to 2 lb. and therefore $\frac{1}{2}$ of such weight makes the *Mund*.
 The *Seer* used for weighing copper, brass, lead, pewter, tin, &c. but not iron, whether by wholesale or retail, is equal to 1107.7 grains Troy, or 9 out of 10, and therefore 11.087 such *Seers* are equal to 1 *Mund*.
 The *Shikhar* weights are used at the Custom House of this station, and also occasionally by merchants.

The measure used for all kinds of grain is equal to 17.7 lb. and is subdivided into *indras*, *paras*, and *chakras*. Four of these measures make the *dhara*, which answers to 14 *Cattars*.
 It is to be observed, that grain is never sold by weight in this country.

The measure for oil is equal to $\frac{1}{4}$ of an English Quart, and is divided as above. For wheaten, in brass vessels at least, the contents of which are ascertained by this measure.
 The *Long Measure* is the *Mora*. That used by stone-cutters equals $32\frac{1}{2}$ English inches, and that employed by carpenters $31\frac{1}{2}$ ditto.
 The *Colo* used by farmers in measuring land contains 24 English Feet.

TRACOMATEE. See COROMANDEL.

VILLOR. See ANNOT.

VISACAPATA. See MUSEUM.

WALLABARAD. See ANNOT.

WALLABARAD. See ANNOT.

APPENDIX.

EXPOSITION

OF

ORIENTAL MEASURES OF TIME,

COMPRISING

THE YEARS, ERAS, AND CALENDARS OF VARIOUS NATIONS.

THE measures or divisions of Time have varied considerably in different ages and countries, and are still various, especially in Asiatic states and empires. In order to explain these several calendars, some previous exposition of the European or Christian Calendar is necessary, which is the only division of time that accords with the accurate deductions of science, as well as with the natural course of the seasons.

Time is mostly measured by the motions of the heavenly bodies, real or apparent, and is generally divided into years, months, and days. The following are the principal European divisions, and computations of time.

EUROPEAN YEARS.

Years are distinguished into Solar, Sidereal, Lunar, and Planetary.

A *Solar Year* is the space of time in which the sun appears to make a complete revolution through the twelve signs of the zodiac, that is, from one equinoctial point of the ecliptic to the same point again; and hence it is called the Tropical Year. This

revolution is found to be completed in 365 days 5 hours 48 minutes and 48 seconds on a mean $= 365\frac{1}{4}\frac{0}{5}\frac{0}{0}$ days.

The *Sidereal Year* is the time in which the sun appears to revolve from one star in the ecliptic to the same star again, and is 365 days 6 hours 9 minutes and 11.5 seconds. See note, page 158.

The *Lunar Year* is composed of twelve complete lunations, each of which is found to be on a mean 29 days 12 hours 44 minutes and 3 seconds; and hence the true lunar year is 354 days 8 hours 48 minutes and 36 seconds $= 354\frac{1}{3}\frac{1}{0}$ days.

Planetary Years are the periods in which planets revolve in their orbits; and are rarely used for civil purposes, except in India.

MONTHS.

Months may be distinguished under four different heads, namely, Solar, Lunar, Civil, and Calendar Months.

A *Solar Month* is the twelfth part of a solar year.

A *Lunar Month* is the twelfth part of a lunar year.

Civil Months are the common reckoning of four weeks each.

Calendar Months are those given in almanacks, &c.

DAYS.

Days are distinguished into Solar, Sidereal, and Civil.

The *Solar* or *Astronomical Day* is the time between two successive transits of the sun's centre over the same meridian, which takes place at apparent noon, and this time is subject to small variations, owing to the obliquity of the ecliptic to the equator, and to the eccentricity of the earth's orbit round the sun. These variations are computed in a table called the *Equation of Time*, which applied to solar or apparent time, according to the directions inserted in almanacks, give mean or equated time, such as is exhibited by a perfect clock or chronometer.

A *Sidereal Day* is the interval between two successive transits of a star over the same meridian; which is always perfectly uniform, owing to the uniformity of the earth's diurnal rotation on its axis, and the infinite distance of the fixed stars from the earth's orbit. Thus at the end of the year the star will have gained a day upon the sun, viz. 366 sidereal days answers nearly to 365 solar days.

A mean solar day is therefore longer than a sidereal day by 3 minutes 55.91 seconds of solar time, or 3 minutes 56.55 seconds of sidereal time.

The solar or astronomical day begins at apparent noon, and the civil day at the preceding midnight, reckoning the latter according to mean solar, or clock time.

THE GREGORIAN OR CHRISTIAN CALENDAR.

A calendar may be defined a mode of recording the measures of time, for the regulation of religious festivals, as well as for the purposes of business and the computations of chronology.

The Christian Calendar is derived from the ancient Roman Calendar, but with considerable corrections and modifications. The lunar year was that first used by the Romans, as well as probably by all other ancient people, and it was continued until the forty-sixth year before the Christian era, when the solar year was introduced by Julius Cæsar, and therefore called the Julian year. The primitive Christians adopted the same Calendar, making the year consist of 365 days in three successive years, and 366 in the fourth year, which was termed Bissextile or Leap Year. This computation continued without alteration throughout the Christian world, until the year of our Lord 1582, when it was ascertained by the concurring operations of different astronomers, that the Julian year was 11 minutes and 12 seconds too long, amounting to a day nearly in 129 years. And thus it was found that the time had advanced ten days beyond the regular course of the seasons, and the proper periods of celebrating the festivals.*

In consequence of this discovery, it was ordered by Pope Gregory XIII. that the year 1582 should consist of 355 days only, which was effected by omitting ten days in the month of October, viz. from the 5th to the 14th inclusive, and to prevent the recurrence of a like irregularity it was ordered that in every three

* It may be stated here that the festival of Easter is celebrated on the first Sunday after the first full moon after the 21st of March; and if such full moon fall on a Sunday, that is Easter-day, from which period the moveable festivals of the Christian church are regulated.

centuries out of four the last year should be a common one instead of a leap year, as it would have been by the Julian calendar.

Thus the year 1600 remained a leap year, but 1700, 1800, and 1900 were to be common years. This amended mode of measuring time was called the Gregorian method, or New Style, and was adopted in all Catholic countries, while the Old Style continued to be employed by other Christians until the year 1700, when the Protestants of Germany received the New Style, and in England it was adopted, by Act of Parliament, in 1752, by adding eleven days, that is, calling the 3d of September the 14th. During the present century twelve days are allowed for the difference of styles, and thirteen will be the number during the next century. It should be observed that in the Greek church the Julian account is still retained.

Such are the outlines of the Gregorian Calendar, but some further explanation of its Cycles and Periods seems here necessary.

CYCLES AND PERIODS.

Cycles are certain periodical revolutions introduced for measuring and marking time. Thus in the Christian Calendar there are the Solar Cycle of 28 years, the Lunar Cycle of 19 years,* and the Roman Indiction of 15 years. The product of these three numbers, viz. 7980, has been adopted for the comparison of dates antecedent as well as subsequent to the Christian era. It is called the Julian Period, from Julius Scaliger, the name of the inventor.

The Golden Number, Epact, and Dominical Letter should be also explained.

The *Golden Number* is the number of years elapsed in the Cycle of the Moon. It is found by adding 1 to the date of the year, then dividing the sum by 19, and the remainder is the Golden Number.

The *Epact* is the moon's age at the beginning of the year. It is found by multiplying the Golden Number by 11, and dividing

* The Lunar or Metonic Cycle computes the lunations to return in nineteen years, and continue as they did before; but this is not quite correct, there being a small error, which will amount to a day too much in $310\frac{1}{20}$ years.

the product by 30. From the remainder take 11, or if this remainder be less than 11 add 19, and this will give the Epact, which is used for finding the moon's age.

The *Dominical Letter* is one of the first seven letters of the alphabet, which in almanacks marks the Sundays throughout each year. It is found by adding to the given date of the year its fourth part, rejecting remainders, and dividing this sum by 7. The remainder subtracted from 8 leaves the index of the letter, reckoning A 1, B 2, &c., but in Leap Years the letter and its preceding one are taken, as hereafter explained.

EXAMPLES.

To find the Golden Number, Epact, and Dominical Letter for the year 1831.

$$\begin{array}{r}
 1831 \\
 \underline{1} \\
 19)1832(96 \\
 \underline{171} \\
 122 \\
 \underline{114} \\
 8 \text{ Golden Number} \\
 \underline{11} \\
 30)88(2 \\
 \underline{60} \\
 28 \\
 \underline{11} \\
 17 \text{ Epact.}
 \end{array}$$

$$\begin{array}{r}
 4)1831 \\
 \underline{457}
 \end{array}$$

$$\begin{array}{r}
 7)2288 \\
 \underline{}
 \end{array}$$

326 remainder 6, which subtracted from 8 leaves 2. Hence B is the Dominical Letter for the above year.

By the following Table may be found by inspection the Dominical Letter for any year, and also the day of the week, answering to any date or day of the month, and the contrary.

PERPETUAL CALENDAR,

FROM 1820 TO 1904,

Which may be continued to any length of time on the same plan.

YEARS.							MONTHS.		SUNDAYS.						
A	G	F	E	D	C	B			1	2	3	4	5	6	7
1820	21	22	23		24	25			8	9	10	11	12	13	14
26	27		28	29	30	31			15	16	17	18	19	20	21
	32	33	34	35		36			22	23	24	25	26	27	28
37	38	39		40	41	42			29	30	31				
43		44	45	46	47		January . . . } October . . . }		A	B	C	D	E	F	G
48	49	50	51		52	53	May		B	C	D	E	F	G	A
54	55		56	57	58	59	August		C	D	E	F	G	A	B
	60	61	62	63		64	February . . } March . . . } November . . }		D	E	F	G	A	B	C
65	66	67		68	69	70	June		E	F	G	A	B	C	D
71		72	73	74	75		September . } December . }		F	G	A	B	C	D	E
76	77	78	79		80	81	April } July }		G	A	B	C	D	E	F
82	83		84	85	86	87									
	88	89	90	91		92									
93	94	95		96	97	98									
99		1900	01	02	03										

USE OF THE ABOVE TABLE.

Under the column *years* find the date, above which is the Dominical or Sunday Letter for that year; then against the given

month in the middle column find the same letter in the third column, over which are placed the days of the month for every Sunday in the month. In Leap Years, for January and February use the letter above the blank space for the year; for all the rest of the months use, with the preceding one, the letter belonging to the respective year.

The Sundays being thus found, any other day of the week may be thence ascertained.

EXAMPLE I.—To find what day of the month the first Sunday will fall in November, 1830.

Observe the date in the table of years, over which is the Dominical Letter for 1830, C; in the column of months it is obvious that the first C in November is the 7th day; or, if it be required from the day of the month to find the day of the week, suppose the 25th of December, 1830. It appears that the letter C stands under the 5th of December. Thus the 26th is the nearest day, which being Sunday, the 25th is on the Saturday.

EXAMPLE II.—To find the day of the week answering to the 24th of June, 1831.

Observe the date, 1831, in the table of years, over which is the Dominical Letter B; and over B against the month of June is the figure 26, which is the date of the last Sunday in that month, and therefore the 24th is Friday.

THE HEGIRA OR MAHOMETAN CALENDAR.

This mode of measuring time is universally adopted where the Mahometan religion prevails, and is besides frequently referred to in illustration of various Oriental Calendars. Its epoch or era is the day when Mahomet fled from Mecca to Medina, which corresponds with Friday the 16th of July, A. D. 622.

The years that compose the Hegira are lunar years, which are very accurately measured, and their fractional parts skilfully disposed of. It has been already stated (page 148) that the lunar year is $354\frac{1}{3}\frac{1}{8}$ days, and hence this fraction, in the course of 30 years, amounts to 11 days; which is accounted for by adopting a cycle of 30 years, 11 of which are reckoned at 355 days and the others at 354; the former are called *Abounding years*, and are

mixed with the latter as hereafter explained. The year is divided into 12 months of 30 and 29 days alternately, except the last month of each Abounding year, which is reckoned 30 days.

As the solar year used in the Christian Calendar contains $365\frac{1}{4}\frac{0}{5}\frac{0}{6}$ days, which is $10\frac{1}{2}\frac{0}{2}\frac{7}{5}$ days longer than the lunar year, 11 days are used for short intervals, and as there is no embolism or intercalation adopted for adjusting this difference, the commencement of each lunar year anticipates the conclusion of the solar by 11 days nearly, and thus retrogrades through all its seasons in $32\frac{1}{2}$ solar years, or $33\frac{1}{2}$ lunar years, nearly.

It may be observed, that there are two modes of measuring the Turkish year, the one by the cycle of 30 years above described, which is used for historical or other important purposes, and is therefore called the Chronological or Political Year; the other, which is called the Popular Year, is used for common business and religious festivals. Its commencement is estimated from the first appearance of the new moon, at the beginning of the first month, and thus the successive twelve months are measured, which, on the whole, do not essentially differ from those of the cycle. The solar year, however, is on many occasions used by Mahometans, especially in scientific computations, but always according to the Julian Calendar, or Old Style.

Lunar and solar years may be compared by the following Rules:

Multiply any number of solar years by 1,03068, and the product, cutting off 5 decimals, will give the number of lunar years; or for the reverse operation, multiply the number of lunar years by ,97022, cutting off 5 decimals, which will give the number of solar years: but when there are months and days to reckon, as in the comparison of the Hegira and Christian Calendars, a Table saves much labour and perplexity. Such is the following, which extends from the year 1823 to 1900. But for a more comprehensive Table, viz. from the commencement of the Hegira to the year 2000, see *L'Art de Verifier les Dates*, Vol. I., from which the following Table is extracted.

TABLE OF THE HEGIRA.

Shewing the day of the Christian Calendar on which each Mahometan year begins, from A. D. 1823 to 1900.

An. Heg.	An. Dom.		An. Heg.	An. Dom.	
1239	1823	Sep. 7	1279	1862	June 29
1240*	1824	Aug. 26	1280	1863	June 18
1241	1825	Aug. 16	1281*	1864	June 6
1242	1826	Aug. 5	1282	1865	May 27
1243*	1827	July 25	1283	1866	May 16
1244	1828	July 14	1284*	1867	May 5
1245	1829	July 3	1285	1868	April 24
1246*	1830	June 22	1286*	1869	April 13
1247	1831	June 12	1287	1870	April 3
1248*	1832	May 31	1288	1871	March 23
1249	1833	May 21	1289*	1872	March 11
1250	1834	May 10	1290	1873	March 1
1251*	1835	April 29	1291	1874	Feb. 18
1252	1836	April 18	1292*	1875	Feb. 7
1253	1837	April 7	1293	1876	Jan. 28
1254*	1838	March 27	1294	1877	Jan. 16
1255	1839	March 17	1295*	1878	Jan. 5
1256*	1840	March 5	1296	1878	Dec. 26
1257	1841	Feb. 23	1297*	1879	Dec. 15
1258	1842	Feb. 12	1298	1880	Dec. 4
1259*	1843	Feb. 1	1299	1881	Nov. 23
1260	1844	Jan. 22	1300*	1882	Nov. 12
1261	1845	Jan. 10	1301	1883	Nov. 2
1262*	1845	Dec. 30	1302	1884	Oct. 21
1263	1846	Dec. 20	1303*	1885	Oct. 10
1264	1847	Dec. 9	1304	1886	Sep. 30
1265*	1848	Nov. 27	1305	1887	Sep. 19
1266	1849	Nov. 17	1306*	1888	Sep. 7
1267*	1850	Nov. 6	1307	1889	Aug. 28
1268	1851	Oct. 27	1308*	1890	Aug. 17
1269	1852	Oct. 15	1309	1891	Aug. 7
1270*	1853	Oct. 4	1310	1892	July 26
1271	1854	Sep. 24	1311*	1893	July 15
1272	1855	Sep. 13	1312	1894	July 5
1273*	1856	Sep. 1	1313	1895	June 24
1274	1857	Aug. 22	1314*	1896	June 12
1275	1858	Aug. 11	1315	1897	June 2
1276*	1859	July 31	1316*	1898	May 22
1277	1860	July 20	1317	1899	May 12
1278*	1861	July 9	1318	1900	May 1

* is annexed to each abounding year.

From the foregoing table the general correspondence of dates may be easily determined. Thus to find the Mahometan month and day answering to December 25, A. D. 1830—the table shews that in 1830, the year 1246 of the Hegira begins June 26, which is 186 days before Christmas, or 6 Mahometan months and 9 days; that is, the 9th day of the 7th month Rajah. The following are the names of the months and their number of days respectively :—

	Days.		Days.
1 Moharam	30	7 Rajab	30
2 Safar	29	8 Shahban	29
3 Raby awal	30	9 Ramadan	30
4 Raby tany	29	10 Shawal	29
5 Joumad awal	30	11 Delkeda	30
6 Joumad tany	29	12 Delhiga	29

The last month has 30 days in each *Abounding Year*, which is found by dividing the date of the Hegira by 30, and the remainder is the year of the cycle. If it be 2, 5, 7, 10, 13, 16, 18, 21, 24, 26, or 29, it is an Abounding Year, each of which is distinguished by an asterisk in the foregoing table. The week-days are:

Pazargun	Sunday
Pazar-ertesi	Monday
Sale	Tuesday
Charshambe	Wednesday
Pershambe	Thursday
Juma	Friday
Juma-ertesi	Saturday

The first day of each week, month, and year, is called the *Ferie*, and begins at night after sunset. Thus our Sunday is the first Ferie of the Mahometan week, and our Saturday the 7th.

A table of the arrangement of these numbers is constructed for finding the day of the week of each date, but all such may be speedily found by means of the above Rule, with the application of the perpetual Calendar, page 152.

The Mahometan day and night consist of 24 hours, and the reckoning begins at sunset. From that time to sunrise they call 12 hours, whatever may be the season or latitude, and also 12 hours from sunrise to sunset. Hence their hours must constantly vary, except at the time of the equinoxes.

INDIAN MEASURES OF TIME.

INTRODUCTORY REMARKS.

It is well known, that although astronomy was cultivated with great success by the natives of India at a very remote period,* yet few people have profited less by the modern improvements of that science; and hence the obscurity of their numerous calendars, dates, and eras.

Much light, however, has been thrown on these subjects within the last century by European astronomers, particularly by *Bailly*, *Gentil*, and *Breschie*, in French publications; and by numerous English authors, among whom may be mentioned Messrs. *Marsden*, *Wilkins*, and *Cavendish*, in the PHILOSOPHICAL TRANSACTIONS; and *Sir William Jones*, Messrs. *Colebrooke*, *Davis*, *Bentley*, *Gilchrist*, *Scott*, and *Ellis*, in the ASIATIC RESEARCHES. But the most elaborate work that has hitherto appeared on Hindoo Astronomy has been recently published at Madras, entitled KALA SANKALITA, by *Lieutenant-Colonel John Warren*; which is the more valuable as it particularly treats of the various systems of astronomy of Southern India, whereas most of the other publications relate to Northern India.

It is not pretended in the present tract to analyse those profound publications—all that can be attempted here is to give a general view of their results, so as to enable persons who cannot devote much time to mathematical investigations to comprehend the several Hindoo dates and eras, which are employed in law papers and other important documents, and which are therefore necessary to be understood in the common concerns of business, as well as in the administration of public affairs throughout India.

* The most revered work on Indian astronomy is the SURRIAH SIDDHANTA, which is said to have been given by inspiration above three millions of years since. But European astronomers have, from scientific evidence, reduced that fabulous antiquity to about three thousand years. It may, however, be remarked, that such profound astronomical knowledge as that work exhibits can scarcely be said to have existed in any other part of the world even one thousand years ago.

INDIAN YEARS, &c.

Indian years may be considered under the following heads, Lunar, Solar, Sidereal, Planetary, and Civil Years, and these admit of further distinctions.

The Lunar year consists of twelve Lunar Months, with an Inter-calary Month occasionally inserted, so as to agree with Solar Measure, and then it is called a Luni-solar Year.

The Solar or Sidereal Year is measured by the apparent revolution of the sun from any one star in the ecliptic to the same star again, and this ought therefore to accord with the European sidereal year, which is 365 days 6 hours 9 minutes 11.5 seconds (see page 148). But the Indian sidereal year is 3 minutes 25 seconds longer than our, and also 23 minutes 42 seconds longer than our tropical year, making a difference of a day in about 60 years. For although the Indians have a knowledge of the precession of the equinoxes, they take no account of it in the measure of their year.*

* As this omission makes an essential difference between Hindoo and European astronomy, some explanation on the subject may not be here wholly useless. The precession of the equinoxes is a small change of place in the points where the equator intersects the ecliptic, in consequence of the attraction of the sun and moon on the earth owing to its spheroidal figure. This motion of the equinoctial points is found to go westward, contrary to the order of the signs, at the mean rate of $50''.3$ annually, and thus it meets the sun before the complete revolution of that luminary in the ecliptic.

By the precession of the equinoxes, the fixed stars are constantly changing their longitudes, right ascensions, and declinations, but not their latitudes, except by the diminution of the obliquity of the ecliptic, which is about half a second annually. Hence the signs of the ecliptic move at the above rate, that is, a degree in about $71\frac{1}{2}$ years; and thus on our celestial globes this change is a whole sign since their original construction, that is, each character is about 30° removed from its nominal constellation.

The astronomers of India reckon the annual precession of the stars to be $54''$, and thus they compute the entire cycle to be 24000 years, which is called the Grand Celestial Period, whereas the Europeans reckon it 25765 years. The Hindoos also (who seem partial to round numbers), reckon the obliquity of their ecliptic to be 24 degrees, without any diminution of that angle, whereas the true obliquity at present is $23^\circ 27' 42''$, with the annual decrease above mentioned.

The Planetary Year is deduced from the revolutions of Jupiter. It is chiefly used in Northern and part of Central India for chronological computations, reckoning by cycles of 60 Solar-sidereal years, which cycle is computed as the five revolutions of Jupiter, thus making each revolution twelve years, which is known even to the Indians to be inaccurate; and in order to correct the error, one day is intercalated in 86 years. In several southern provinces of the Peninsula, the cycle of 90 years is used, or $7\frac{1}{2}$ revolutions of Jupiter.

The Civil Year consists of 365 days, and of 366 as often as an intercalation is found necessary. It begins at sunrise immediately preceding the calculated commencement of the astronomical year. It is divided into twelve civil months, the names of which differ, of course, according to the various languages in different parts of India. As each solar month contains as many days and parts of days as the sun stays in each sign of the ecliptic, so the civil month differs from the solar only in its rejecting fractions of days. Each civil month begins at sunrise, at the time of the sun's mean entrance into its respective sign. But for common purposes it is reckoned to be four weeks, and the week seven days, which days are named after the sun, moon, and planets, similar to the European week.*

* The divisions of the year into solar months in all countries correspond with the zodiac of each, and the names of the twelve signs are similar. The zodiac, through which the sun appears to pass in a year, is divided into twelve signs of 30° each; but in India there is, besides, a lunar zodiac, which is supposed to have been antecedent to the solar, and is divided into 27 constellations, also called lunar mansions, each of which is $13^\circ 20'$, and they further adopt a moveable zodiac to allow for the precession of the equinoxes.

As the moon passes through the lunar mansions in $27\frac{1}{3}$ days, 28 were originally reckoned, for the convenience of whole numbers, and divided into four parts or weeks; but though this kind of reckoning has been retained for civil and religious purposes, the solar or sidereal months are adopted, as being more convenient to mark the periods of agriculture, the return of the seasons, and the computations of chronology.

INDIAN LUNAR MONTHS.

The Luni-solar year, it should be again explained, is in some places accounted to begin at the true instant of conjunction, or new moon preceding the commencement of the Solar year, with which it is mainly to concur; and is to be distinguished from the year that commences with the full moon which precedes the same, the months of the former being termed Primary, and of the latter Secondary. Such year is to be divided into twelve lunar months subject by intercalation to a thirteenth month, each month, whatever be its duration, being divided into thirty Teethees, the first fifteen of which are called the enlightened, and the last fifteen the dark half of the month; and these months are generally named according to the solar months of Bengal (p. 161).

The Teethees are not strictly of the same length, but are equal to the time in which the moon's true motion from its conjunction with the sun is twelve degrees. From the new moon till the moon arrives at 12° distance from the sun, is called the First Teethee; from thence till it comes to 24° , is called the Second Teethee, and so on till the full moon, after which the Teethees return in the same order as before. In the latter part of the month the days are counted from the full moon, in the same manner as in the former they are counted from the new moon, only the last day, or that on which the new moon happens, is called the 30th instead of the 15th.

It follows from what has been said that each half of the month constantly begins on the day after that on which the new or full moon falls, except that sometimes the half month begins with the second day, the first being wanting.

But there is much perplexity in these lunar regulations, which need not be further considered here, as they are chiefly used for religious observances and astrological computations, while the records of chronology, agriculture, and the concerns of trade and commerce, are reckoned in solar-sidereal and civil time.

The names of the lunar months are the same as in the following column of the Bengal solar months, with this difference only, that *Chaitra* is the first, *Vaisacha* the second, and the rest in due order.

NAMES AND DURATION OF THE SOLAR MONTHS.

(SURRIAH SIDDHANTA.)

BENGAL.	TAMUL.*		DURATION.				Beginning of months.
			D.	G.	V.	P.†	
Vaisacha .	Chaitram	☾	30	55	32	3	11th April
Jyaishtha .	Vyassei .	☿	31	24	12	4	17th May
Ashad'ha .	Auni . .	☿	31	36	38	4	13th June
Sravana . .	Audi . .	☿	31	28	12	4	14th July
Bhadrápada	Auvani .	☿	31	2	10	3	15th August
Aswina . .	Paratasi .	☿	30	27	22	3	15th September
Cartiga . .	Arpesi .	☿	29	54	7	2	15th October
Margasiras	Cartega .	☿	29	30	24	1	14th November
Paushia . .	Margali .	☿	29	20	53	1	14th December
Magha . .	Tye . . .	☿	29	27	16	1	12th January
Phalguna .	Maussi .	☿	29	48	24	2	10th February
Chaitra . .	Poongoni	☿	30	20	21	2	12th March

* The Tamul astronomers (anciently inhabiting the southern provinces of India) have, it will be observed by the above table, adopted an arrangement of their months different from the northern Hindoos, which difference advances their seasons by one month throughout the year. See *Kala Sanhalita*, page 4.

The following account of the Indian solar months is more popular with respect to the spelling than the above, especially amongst Europeans :—

BENGALÉE.	MALABAR.	HINDOSTANÉE.
Bysacha	Chitera, or	Medam
Joishtha	Vyasee	Edavam
Assaur	Auny	Methoonam
Sravona	Audy	Karkatagam
Bhadra	Auvany	Chengom
Aussin	Paratasi	Kany
Kartic	Arpysee	Toolam
Ugrohoyna	Cartiga	Virschigam
Pouse	Margaly	Dhanub
Maugh	Tye	Magaram
Falgon	Mausee	Kumbham
Choitra	Pungunee	Meenom
		Chyt.

† These initials signify Dandas, Guddias, Viguddias, and Prans. See p. 162.

INDIAN WEEKS, DAYS, &c.

The Hindoo week consists of seven days, which are thus named in different parts of India:—

Etwar, or	Ravi-vara	Sunday
Jumwarar	Soma-vara	Monday
Mungul	Mangala-vara	Tuesday
Boodh	Bhuda-vara	Wednesday
Jumerat	Guru-vara	Thursday
Juma	Sucra-vara	Friday
Sunneecheer	Sani-vara	Saturday

The Indians have several ways of considering the day and fixing its duration. Of these the most common is the Savan or Natural day, also called the Civil day, which is the time between two consecutive sun-risings. It is therefore subject to small variations, which are to be corrected by the table of the Equation of Time; but these corrections are seldom noticed in common reckoning.

The Civil day is sexagesimally divided, and subdivided down to the most minute portions of time.* It may be sufficient here to state, that the day is divided into 60 Dandas, Guddias, or Ghurees, the Danda into 60 Viguddias or Palas, and the Pala into 6 Prans or Breathings, which latter = 4 Seconds. Thus—

		European mean time.	
6 Prans..	} make	1 Pala..	= 24 Seconds
60 Palas..		1 Danda	= 24 Minutes
60 Dandas		1 Day..	= 24 Hours.

Accordingly 365 Days 15 Dandas 31 Palas and 30 Prans equal the Indian year, answering to 365 Days 6 Hours 12 Minutes and 36 Seconds, European time.

* Notwithstanding these minute measures of time, by which the Indians pretend to divide into fractional parts even the twinkling of an eye, yet it does not appear that they have invented any mechanical mode of measuring time with perfect accuracy. They use the clepsydræ, or water-clocks, being vessels through which water runs in a certain time, similar to sand in an hour-glass; but the most common mode of measuring time is by means of a Ghureeal, as follows:—

A thin metal cup is provided, through the bottom of which a small hole

CHINESE MEASURES OF TIME.

Lunar years and months were anciently used by the Chinese, and are still partially retained, especially those that are reckoned after the manner of the Hegira. But the solar measures of time have been introduced by Christian missionaries, and thus chronological events are recorded by cycles of 60 solar years, computed from certain epochs, the principal of which is 2397 years before the Christian era. This number added to our present date, 1831, and divided by 60, gives 70 cycles and 28 years over; but in such computations ordinal numbers are taken instead of cardinal, and thus the present year is reckoned the 29th of the 71st cycle. This simple mode, however, is rendered more complicated than necessary by the custom of giving a particular name to each cycle, and marking it with Chinese characters. For a particular explanation of which, see the COMPANION TO THE BRITISH ALMANAC for 1830. The Chinese, also, according to the custom of most other countries, date from the commencement of the reign of their existing sovereign. Thus the year 1831 is the 11th of the Emperor Kang-yin.

The Chinese divide their day into 24 hours, beginning an hour before midnight; and they give a particular name to every two hours.

is perforated. This cup swims on the surface of a vessel of water, until the water running through the hole fills the cup, which then sinks. This is so contrived that it sinks in about 24 Minutes, or a Ghuree, and a kind of bell or gong is struck at the expiration of each. The sound is usually loud enough to be heard throughout a village, and thus, in some measure, serves the purpose of a town clock.

It should, however, be observed, that the Hindoos construct sun-dials with mathematical accuracy. The semi-circle of the horizontal or vertical dials is regularly divided, first into twelve hours called *Angulas*, and each Angula into sixty parts, called *Vinculas*; terms which seem to indicate that the science of Hindoo Gnomonics is of European origin.

JAPANESE MEASURES OF TIME.

The people of Japan reckon their time nearly after the manner of the Chinese, but their epochs or eras differ; the principal of these is 660 years before the Christian era; according to which the date 1831, A. D. corresponds with the 32d year of their 42d cycle of 60 years. Their northern neighbours, the Tartars, are said to follow nearly the same plan.

BURMESE MEASURES OF TIME.

In the Birman empire lunar computations of time are chiefly used, resembling those of their neighbours the Hindoos, but possessing less scientific precision. Their historical events, however, are reckoned in Solar years, and from different epochs, of which the following are the principal, as stated in CRAWFORD'S EMBASSY TO AVA:—

Grand Epoch	691 B. C.
Sacred Era	543 B. C.
Prome Era	79 A. D.
Vulgar Birman Era . . .	639 A. D.

INDIAN ERAS, EPOCHS, AND CYCLES.

The words Era and Epoch sometimes mean the same thing; but Epoch is occasionally used to designate a certain point or period of time, such as the beginning of an Era.

The Indian Eras are very numerous, and are therefore arranged in the following alphabetical order:—

Bengalee Era	Parasurama Era
Cali-yug Do.	Saharsoyee Do.
Chureegur Do.	Salbahan Do. or Salivahana
Fussilee Do.	Sumbut Do. or Samvat
Grahaparivisthi Do.	Vikramajet Do.
Guzrat Do.	Vrihaspati Do.
Hegira Do.	Willaity Do.
Malabar Do.	Yezdegerd Do. or Parsee
Marroo Do.	

The *Bengalee* Era was originally the same as the Hegira, but the Solar-sidereal Year was subsequently adopted. Its Era is 593 years after the Christian Era. There is, however, an allowance of one day in 60 years to be made.

The *Cali-yug* is the most ancient Era in India, and dates from a period of 3101 years before Christ, or ordinally the 3102d year.

The *Chureegur* belongs to the Parsee Era, beginning A. D. 630.

The *Fussilee* is an Era generally known throughout India, and is supposed to be derived from the Hegira. Its epoch is commonly reckoned the 15th of July, A. D. 628; but at Madras it is fixed

invariably at the 12th of July. It is chiefly used in revenue accounts, and its minute subdivisions are generally neglected. The Fussilee year used in Bengal begins in September, and the full moon preceding the autumnal equinox is the first day. The year is lunar, and hence the date differs from the common Fussilee, the commencement being the year 593.

The *Grahaparivisthi* is a cycle of 90 years, used in the southern provinces of the peninsula of India, anciently called the Tellinga Account, but is now little attended to. Its Era is B. C. 24 years.

Guzrat, see *Vikramajet*.

Hegira, see page 153.

The *Malabar* Era takes its date from the year of our Lord 825, and reckons in solar years.

Marroo, see *Vikramajet*.

The *Parasurama* derives its name from a prince who lived in the year 1176 before Christ. It is chiefly used in the south-west provinces of India, anciently called by the natives the Malayala country.

Saharsoyee, see *Yezdegerd*.

The *Salbahan*, or *Salivahana*, is identical with Cali-yug as to the names of months, division and commencement; but its epoch differs, being dated A. D. 78. It is much used in the southern and western provinces of India. The years of this Era are called Sacah. Both Eras were formerly used with solar-sidereal time; but the *Salbahan*, according to the *Bombay Almanac* for the last 30 years, reckons by lunar years, and its date in 1830 was 1751.

Sumbut, or *Sumvat*, see *Vikramajet*.

The *Vikramajet*, or *Vikramadetya*. This Era is chiefly employed in Central India, and in the northern provinces. It dates from the period when an Indian prince of that name ascended the throne, and his reign began 57 years before Christ. The years are lunar, of which the proportion is $32\frac{1}{2}$ solar to $33\frac{1}{2}$ lunar years nearly. Hence in 1831 the *Vikramajet*, *Guzrat*, and *Marroo* dates are 1888. But in order to find the exact difference between these, which, though falling in the same year, vary from each other some days, the date of their commencement should be precisely known, which in some publications is imperfectly given, and in others wholly omitted.

The *Vrihaspati*, or *Brihaspotee* (Jupiter) is a cycle of 60 years, constructed on the hypothesis that the planet Jupiter makes 5 revolutions in that time (see page 159). This cycle is used in some of the northern provinces of India. It is frequently employed in connexion with the Era of *Vikramadetya*. In Bengal the cycle now passing is the 84th and the 36th year, which agrees with A. D. 1831. The first cycle therefore began 3185 years B. C. By the *Tellinga* account, the first cycle began 3114 years B. C., and, consequently, the year 1831 coincides with the 25th year of the 83d cycle.

The *Willaity* differs from the Bengal era only 15 days, being this number anterior.

Yezdegerd is a Persian era, which dates from A. D. 630, and reckons by solar time, but it does not appear that this Parsee year strictly accords with any known measure of time, evidently for want of the due application of intercalary days, for it is observed in comparing dates in the *Bombay Almanac* for the last 28 years that it has lost seven days, that is, a day in every four years, the year 1800 being October 9th, 1169, and the year 1829 October 2d, 1198.

TABLE OF INDIAN ERAS AND THEIR CORRESPONDING DATES.

	Eras.	Corresponding Dates with 1831.
Bengal Era	593 A. D.	1238
Burmese Grand Epoch	691 B. C.	2522
Cali-yug	3101 B. C.	4932
Chinese	2397 B. C.	29th year of 71st cycle
Chureegur	630 A. D.	1201
Fussilee	628 A. D.	1203
Grahaparivisthi . . . } (cycle of 90 years)	24 B. C.	55th year of 21st cycle
Guzrat	57 B. C.	1888
Hegira	622 A. D.	1247
Japan	660 B. C.	32d year of 42d cycle
Malabar	824 A. D.	1007
Marroo	57 B. C.	1888
Parasurama	1176 B. C.	3007
Saharsoyee	630 A. D.	1201
Salbahan	78 A. D.	1753
Sumbut	57 B. C.	1888
Vikramajet	57 B. C.	1888
Vrihaspati } (cycle of 60 years)	3184 B. C.	36th year of 84th cycle
Do. by Tellinga	3114 B. C.	25th year of 83d cycle
Willaity	593 A. D.	1238
Yezdegerd or Parsee .	630 A. D.	1201

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<i>Tola</i> , a gold weight at Bombay, &c.	48
<i>Toman</i> , a money of account in Persia, &c.	120
<i>Tomand</i> , or <i>Teman</i> , a measure at Mocha	108
<i>Tommond</i> , a measure for rice at Betelfakee	47
<i>Tompong</i> , a weight at Natal	110
<i>Tooda</i> , a timber measure in Travancore	144
<i>Toolum</i> , a weight at Colatchey	66
<i>Tuka</i> , a pearl weight at Bombay	48
<i>Tung</i> , a long measure in China	64
<i>Tussoo</i> , a long measure at Bombay	49
<i>Vakia</i> , a weight in Arabia, and Abyssinia	47, 108
<i>Vall</i> , a weight at Bombay, Surat, &c.	48
<i>Vallum</i> , a measure of capacity at Sankerrydroog	131
<i>Vesay</i> , a weight in the Mysore	66
<i>Vis</i> , a weight at Trichinopoly	145
<i>Viswassee</i> , a long measure at Broach, Surat, &c.	50, 140
<i>Vouah</i> , a long measure at Siam	135
<i>Vussa</i> , or <i>Wusa</i> , a land measure at Broach, Surat, &c.	50, 140
<i>Unglee</i> , a cloth measure at Jaulnah	84
<i>Urdee</i> , a money of account at Bombay	17
<i>Uta</i> , a money of account at Bantam	40
<i>Yabbolam</i> , a weight at Coilpatam	103
<i>Zavah</i> , a measure at Coilpatam	104

* * * As the above Index is adapted, in some degree, to answer the purpose of a Dictionary of Indian Monies, Weights, and Measures, it must be particularly useful to merchants and traders unacquainted with the Oriental Languages: and for the same purpose the following Vocabulary is added, which explains such commercial, agricultural, and political terms as are in common use throughout the Presidencies.

A VOCABULARY OF INDIAN TERMS.

Extracted chiefly from the Glossary of Oriental Terms, prepared for Parliament, in 1830, by CHARLES WILKINS, LL. D. F. R. S., &c.

ABKARRY, duties on the manufacture of intoxicating drugs and liquors
ABWAB, a gate, a doorway; ways and means; also a tax
ADAWLUT, justice, equity, a court of justice
ADKARY, a governor, relating to a superior
AGRAHARAH, villages held by brahmins
AKHERJAUT, expenses, charges in general
AKTA, assignment of land
ALTHAMGA, a royal grant, a perpetuity
AMEER, a nobleman, high rank
AMLAH, agents, officers, zemindary charges
ANWERS, horsemen, cavalry
ARBAB, lords, masters, superiors
ASHA, terrestrial latitude, reckoned from the equator
ASHAM, retinues, military parade
ASOPH, a prime minister, a superior officer
ATCHKUTT, rice-fields, lands prepared for rice
ATHALS, lands farmed or rented
AUMEEN, a trustee or commissioner
AUMIL, a native collector of revenue
AURUNG, a manufactory
AYACUT, the contents or measurement of land
AYMA, learned or religious men
AZMAYESH, trial or examination

BABO O, master, sir, a title of respect
BAKY, remainder, what remains
BANYAN, a Hindoo merchant, also an interpreter
BATTA, deficiency, discount, allowance
BAZAR, a market-place, a daily market
BEBEE, a lady of rank, a gentlewoman
BEGARAH, one who has no work, an idle fellow
BEGUM, a lady of high rank, a princess
BHAGAH, a degree, or $\frac{1}{360}$ of a circle
BRAHMA, the first person of the Indian godhead
BRAHMIN, or **BRAHMAN**, a divine, a priest
BUNJARY, a corn or provision merchant
BURSAUT, the rainy season, or periodical rain

CABOOLEAT, an agreement for renting land
CADJAN, or **OOL**, leaves of the palmyra-tree, used as paper

- CALA**, one minute of a degree, or $\frac{1}{60}$ part
CALPA, a period of conjunction between the planets, &c.
CARNA, the hypotenuse of a right angled triangle
CAUZY, a chief judge or justice: in Turkish, *Cadi*
CAWEL, a watch, guard, watching fees
CHOKEEDAR, a custom-house officer or receiver
CHUCKLA, a district consisting of several pergunnahs
CIRCAR, or **SIRCAR**, a government or large district
COLLURIES, salt-works or salt grounds
COOLIES, labourers, porters, chairmen
CUSBA, a town or township
CUTCHERY, a treasury, a court of justice

DADNY, money given in advance to tradesmen
DAR, a keeper, a termination signifying an office, as **Zemin-dar**
DAROGAH, a superintendent of the mint, &c.
DEH, a village or small town
DES, a country or district
DESMOOK, a collector or chief of a district
DINA, a day considered in various ways
DUBASH, an agent, an interpreter

EGARAH, a farm or revenue
ENAUUM, grants, gratuities

FASAL, or **FUSILY**, season, crop, harvest
FUTWAH, a judicial decree, sentence

GARN, or **GRAM**, or **GAN**, a village
GATES, motion, the diurnal motions of the planets
GODOWN, a warehouse
GOOROO, a grave man, a spiritual guide
GRATANA, an eclipse of the sun or moon
GUENI, or **GURNI**, a tenant
GUNGE, a granary or commercial dépôt

HACKIKUT, a statement or account
HAKIM, a commander or governor
HAREES, a guard, sentinel, watchman
HASELI, produce, result, revenue duties on salt
HAUT, a weekly market held on stated days
HAVELLY, a house, domain, sometimes rent
HAZARY, the commander of a thousand men
HUZZOOR, seat of European government

JAGGERY, sugar in its unrefined state
JAGHIRE, or **JAGHEER**, land for government purposes
JAMMA, the sum total of an account
JANGLE, or **JUNGLE**, lands overrun with wood, weeds, &c.
JANU, the knee, also a name given to the sun
JEMNUM, birthright, heirship

KADEEM, the headman of a village
KALA, time in its general acceptation
KANUM, a mortgage deed
KARAR, agreement, contract, engagement

KATE, a field, a tract of land
KAWELI, watching, guarding, protecting
KEFFYET, profit, advantage, surplus
KERP, or **KERPAS**, cotton raw or manufactured
KHAM, or **KAM**, unripe, crude, gross
KHANABERRY, a house with its appurtenances
KHERYAUT, charities, alms, allowances
KHURCHA, disbursements, expenditure
KORAN, the Mahometan scripture
KURNUM, a secretary or clerk
KYAL, a weighman, a divider of crops
LAC, a term applied to money, see page 28
LANEA, the meridian circle, from which the Indian longitude is reckoned,
 lying $75^{\circ} 53' 15$ east of Greenwich
LELAVATI, a general term for the mathematics

MAL, wealth, revenue, rent
MALIK, master, lord, proprietor
MANA, in astronomy, the measure of the year
MARAH, fees in kind, perquisites from the crops
MASA, a general term for month
MINHA, deduction, subtraction
MOCUDDIM, the head ryot, or principal man in the village
MOHIR, or **MOHUR**, a clerk or writer in an office
MOKEEM, an appraiser, one who settles disputes
MONIGAR, a surveyor or manager
MOONSHEE, a letter writer, secretary, or instructor
MOSHAIIRA, monthly wages or allowances
MUFTI, or **MOOFTI**, a Mahometan law officer
MULLA, a learned man, a schoolmaster
MURTA, a small division of time, the twinkling of an eye
MUTT, a college or convent

NABOB, or **NAWAB**, a viceroy or subadar, a title of dignity
NAIR, a chief, a headman or leader
NAUT, a head man in a village, a master
NEKASS, a fair for cattle held daily
NERASHA, the equator of the earth
NUCKDY, ready money, prompt payment

OTTY, a form of mortgage or transfer of property

PADDY, rice in the husk
PALA, a minute of time
PARA, a second
PEISHWA, the prime minister of the Mahratta government
PEON, a footman or foot soldier, an inferior officer
PETTAH, the suburbs of a fortified town
POLLIGAR, the head of a village or district
POLLUM, a district held by a polligar, also a town
PUNDIT, or **PANDIT**, a learned brahmin
PURANAS, books of religion and science, held sacred

RAJAH, a king, prince, or chieftain
RANNY, a queen or princess
RYOT, a tenant, a subject, a peasant

- SABRACAR, a manager for Zemindars and Talookdars
 SALAM, salutation, the form of which is to touch the forehead with the right hand
 SER, SAR, or SIR, a chief, head, or master
 SERF, exchange or discount
 SHASTER, a book of instructions or divinity
 SHROFF, a banker, a money changer or valuer
 SOUBAH, a large province
 SOUBAHDAR, the governor of a Soubah
 SOUCAR, a banker or money lender
 SURRIAH, the Sun
 SURRIAH SIDDHANTA, an ancient and revered system of astronomy

 TALOOKDAR, a rural manager, a petit Zemindar
 TANNAH, a military post or station
 TEEKA, kine, fare, contract
 TEEP, a note of hand
 TERF, division of a pergunnah
 TODDY, the juice of the palm-tree fermented
 TRIN, the rule of three or of proportion
 TUMAR, a roll, volume, book

 VACKAL, an ambassador, agent, commissioner
 VEDAS, science, knowledge, the scriptures of the Hindoos

 WAKENEGAR, a news writer or reporter, an intelligencer
 WASIL, head of revenue, what is received from it

 YUG, or YUGO*, an age; also a conjunction of the sun, moon, and planets

 ZEMINDAR, a land holder, a land keeper, a land agent
 ZILLAH, a district with reference to a personal jurisdiction
 ZUNGEER ZAMIN, chain security. Several persons security for each other

* This word and other Astronomical Terms in the foregoing Vocabulary, are taken from WARREN'S KALA-SANKALITA.—See p. 157.

In conclusion, some apology seems necessary for the various modes of spelling Indian terms which occur in this work, as in other publications on Oriental subjects. This is an inconvenience which perhaps can never be wholly remedied, as a similar diversity is said to prevail in the Orthography of the Languages from which those terms are taken.

THE END.

WORKS

BY THE SAME AUTHOR.

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